

GENERAL DYNAMICS/CONVAIR

November 26, 1963

INSTRUCTION COVER SHEET

TO: All Holders of
MAINTENANCE MANUAL
Model 30
AMERICAN CS-61-057
SWISS CS-61-050
VARIG CS-61-060
GARUDA CS-63-026
CS-61-063

SUBJECT: REVISED PAGE - CHAPTER 53
Revision No. 2, dated Dec. 2/63

The attached pages provide replacement, revised or new pages to your present chapter.
The List of Effective Pages reflects current pages this chapter should contain.

BRIEF DESCRIPTION OF CHANGES:

1. Revised radome installation procedure - art and text.

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1. General

The fuselage is of semimonocoque construction with an overall length of 134 feet 9 inches, a maximum width of 11 feet six inches, and a maximum height of 12 feet five inches. The primary structure (see Figure 1) consists of transverse bulkheads, and longitudinal stringers, with a heavy gage clad aluminum alloy skin. Transverse bulkhead spacing varies from six to nineteen inches throughout the length of the fuselage. Stringer spacing varies from six inches to a maximum of ten inches. The use of heavy gage fuselage skins reduces the number of longitudinal stringers required; no stringers are used in the area of the fuselage 40 inches above the cabin windows to 15 inches below the cabin windows. An external longitudinal is used along the bottom centerline of the fuselage between fuselage stations 526 and 1412. Lighter gage skins are used in areas of smaller radii such as the forward fuselage area; heavier gage skins are used in the areas around door and window openings and above the wing. See Figure 2 for an illustration showing skin plating throughout the fuselage.

The fuselage is divided into several compartments (see Figure 3), the principal ones being as follows:

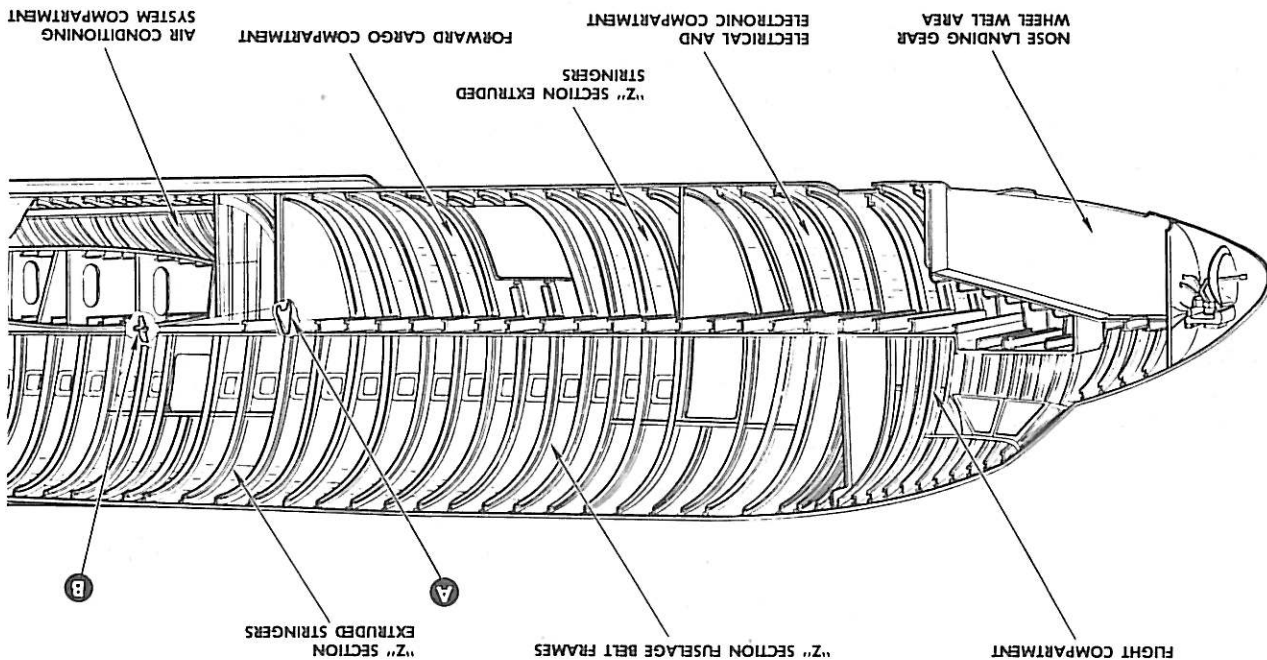
- A. Flight Compartment.
- B. Cabin or Passenger Compartment.
- C. Forward and Aft Cargo Compartments.
- D. Electrical and Electronic Equipment Compartments.
- E. Water Tank and Accessory Compartment.
- F. Air Conditioning Equipment Compartment.
- G. Hydraulic Compartment.
- H. Nose and Main Wheel Wells.
- I. Aft Fuselage Section.

The entire fuselage is pressurized and air conditioned except for the radome area, the nose and main wheel wells, the air conditioning equipment compartment, and the aft fuselage section aft of the aft pressure bulkhead at station 1487.95.

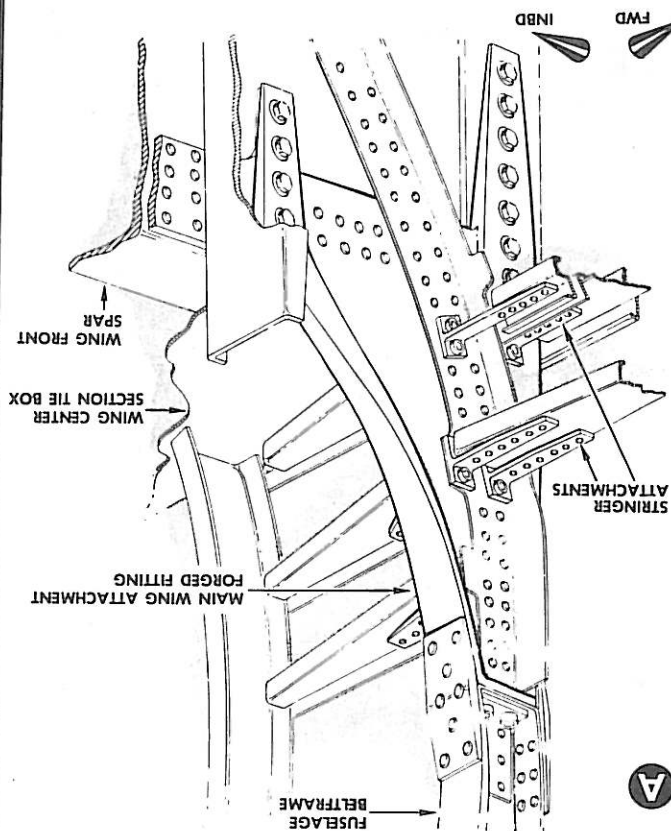
An antenna fairing is installed along the top of the fuselage centerline between stations 674 and 1170.

2. Radome

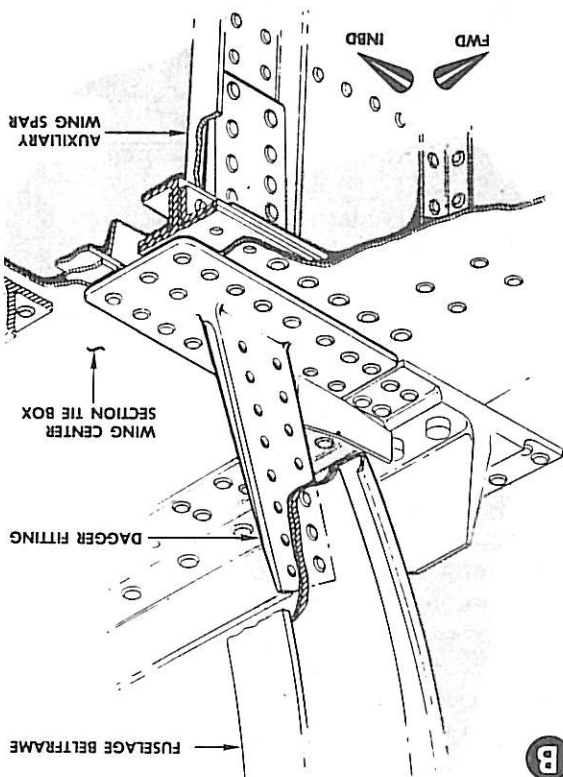
The radome is attached to the fuselage forward pressure bulkhead at station 152 and is hinged at the top. The radome is 52 inches long and will accommodate a 34-inch scanning antenna for the weather radar system. Access to the radar antenna is accomplished by unlocking three rotary latches, one on each side and one on the bottom, and swinging the radome upward until the two hold-open arms lock in place. The radome is removed by unlocking the three latches and removing the hinge pins.



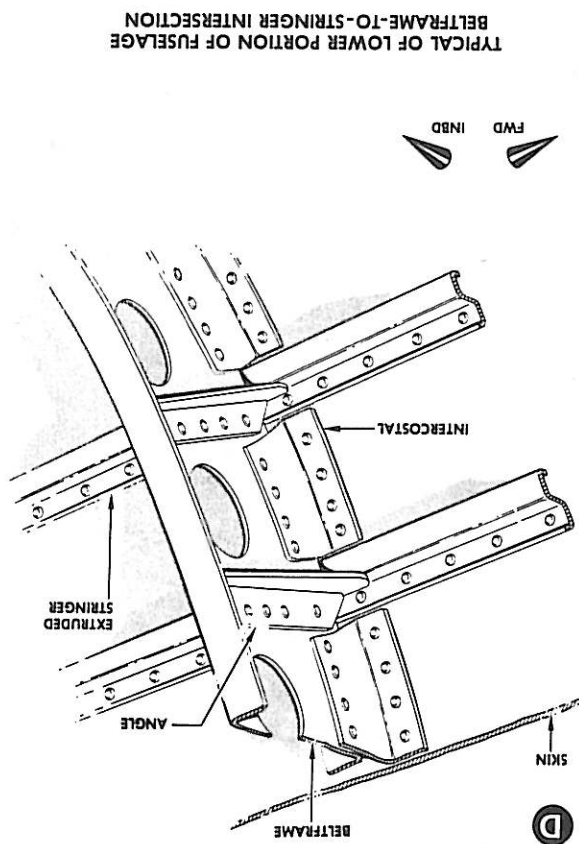
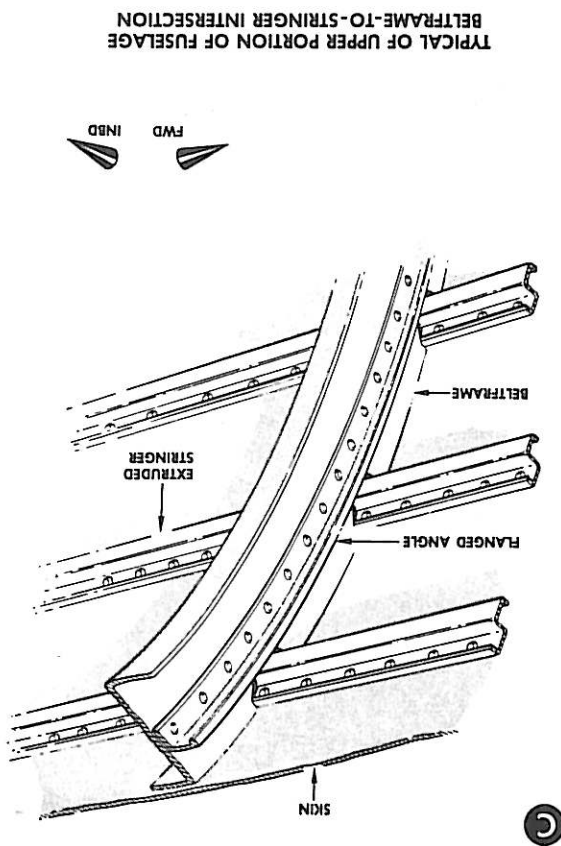
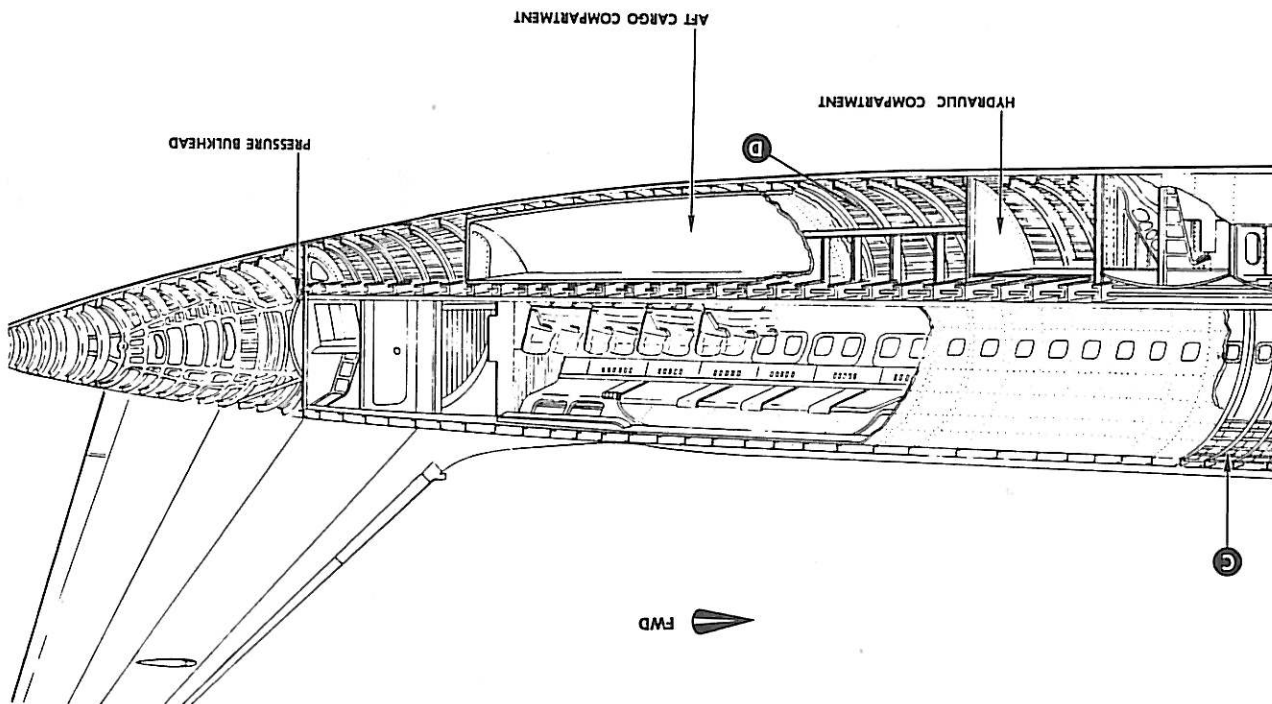
TYPICAL OF MAIN WING-TO-FUSELAGE ATTACHMENT



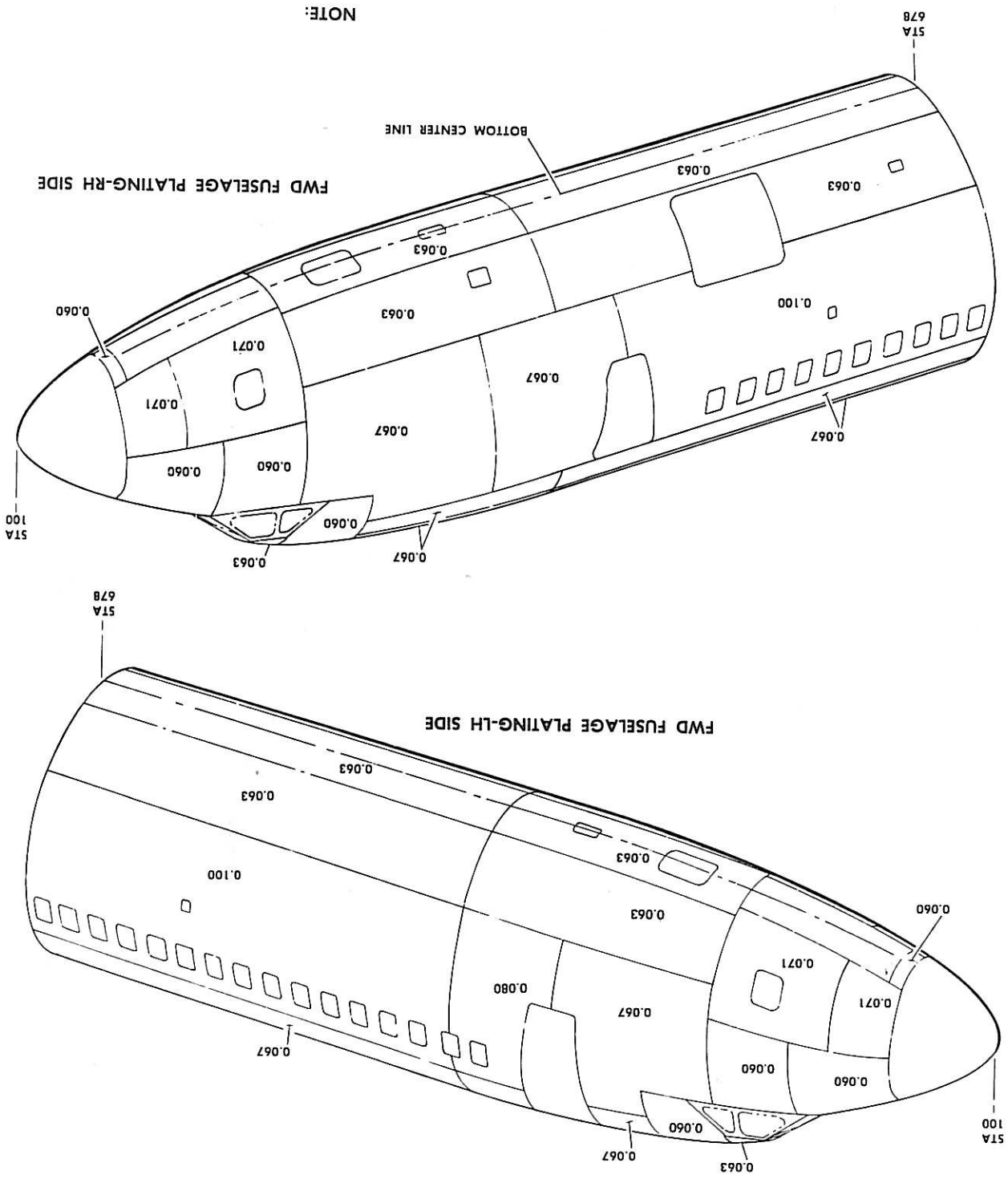
TYPICAL OF INTERMEDIATE WING-TO-FUSELAGE ATTACHMENT



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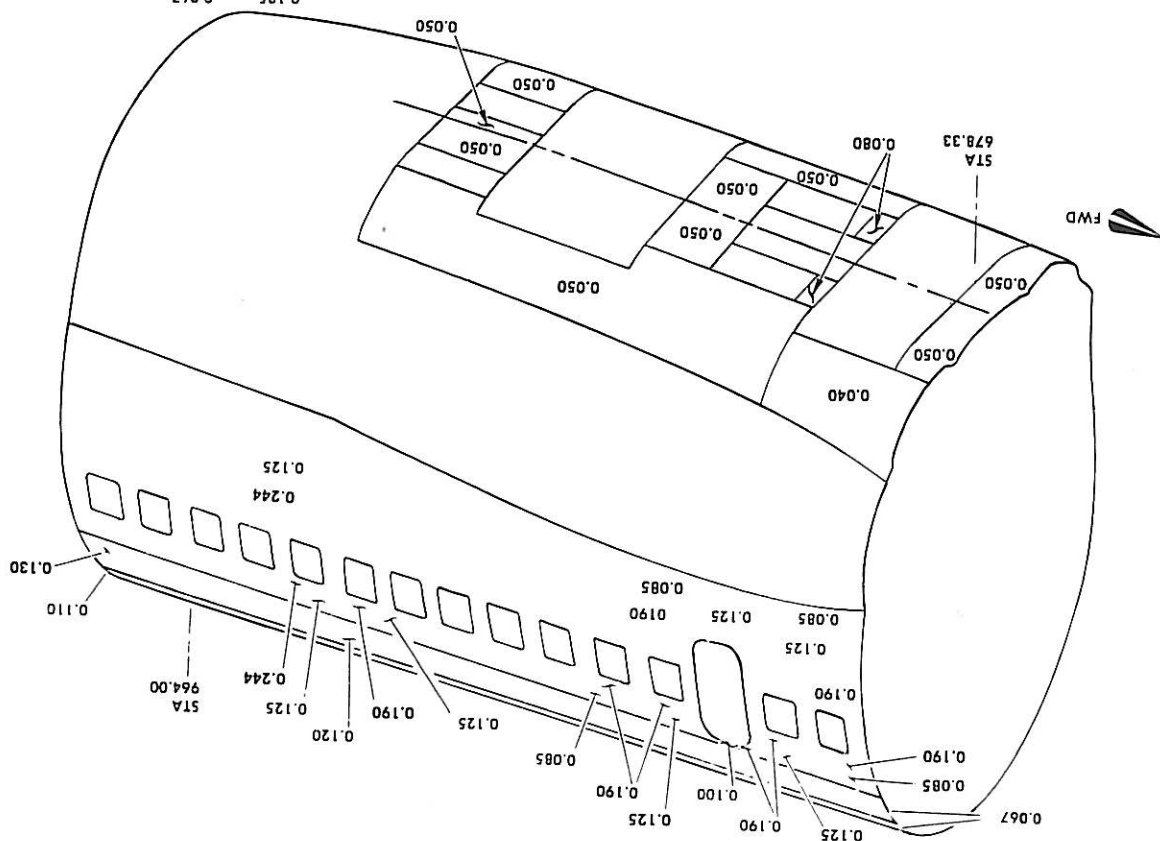
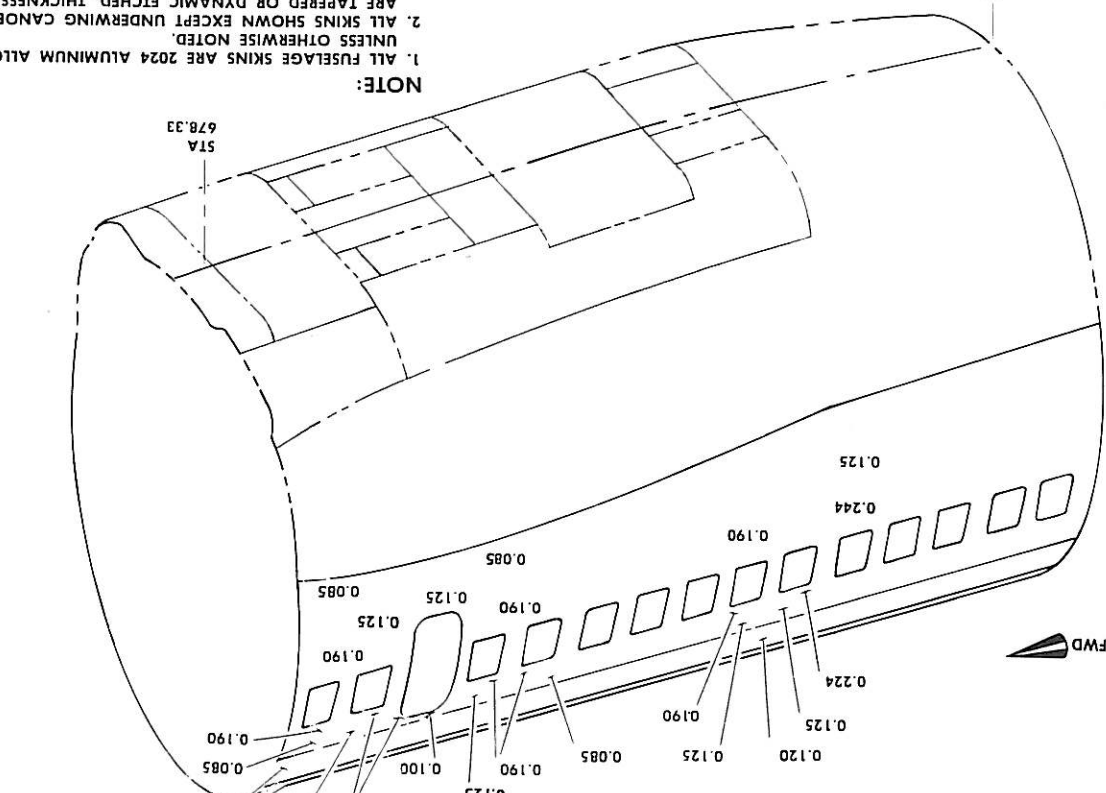


NOTE:
ALL FUSELAGE SKINS ARE 2024 ALUMINUM ALLOY
UNLESS OTHERWISE NOTED.

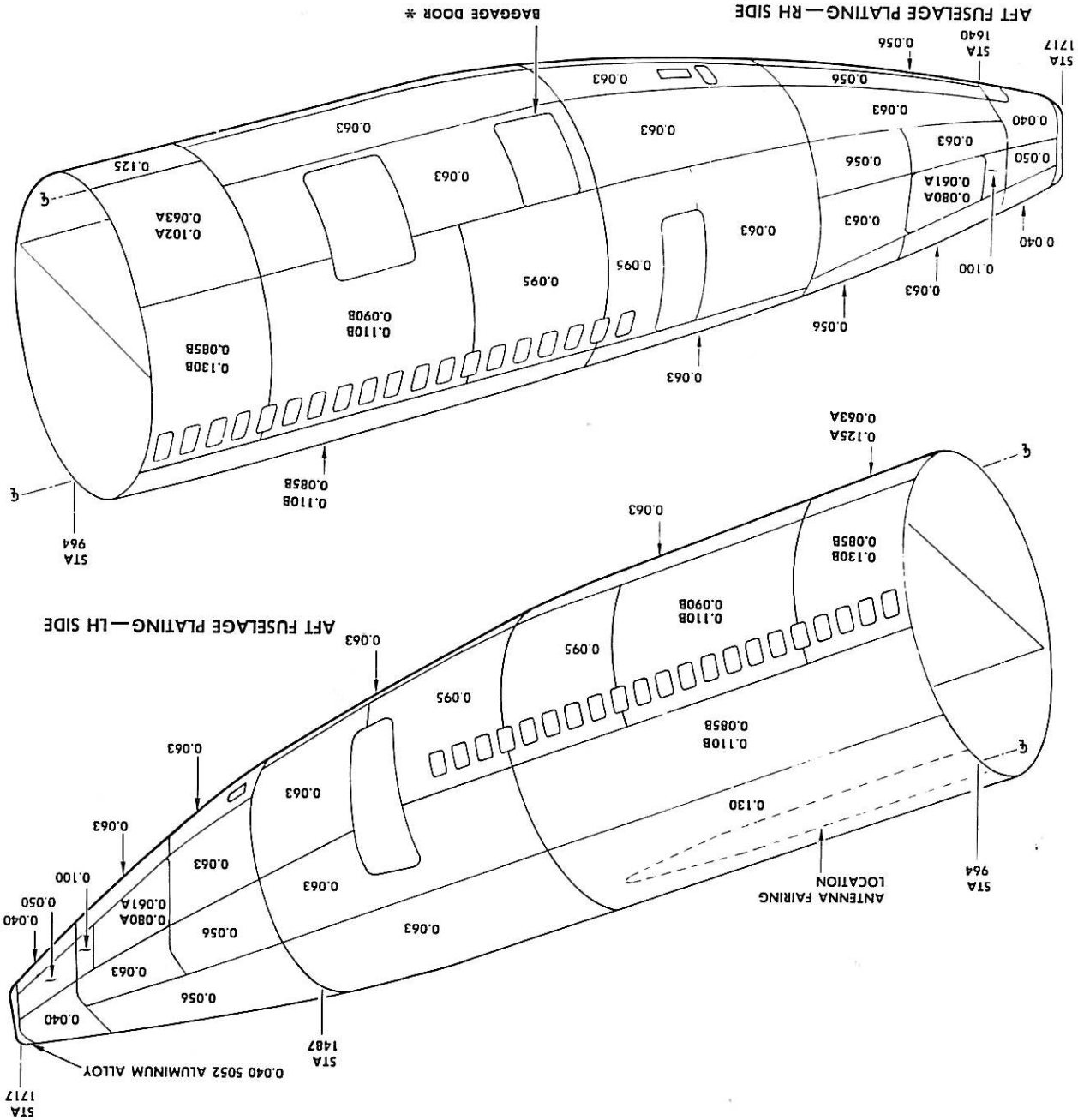


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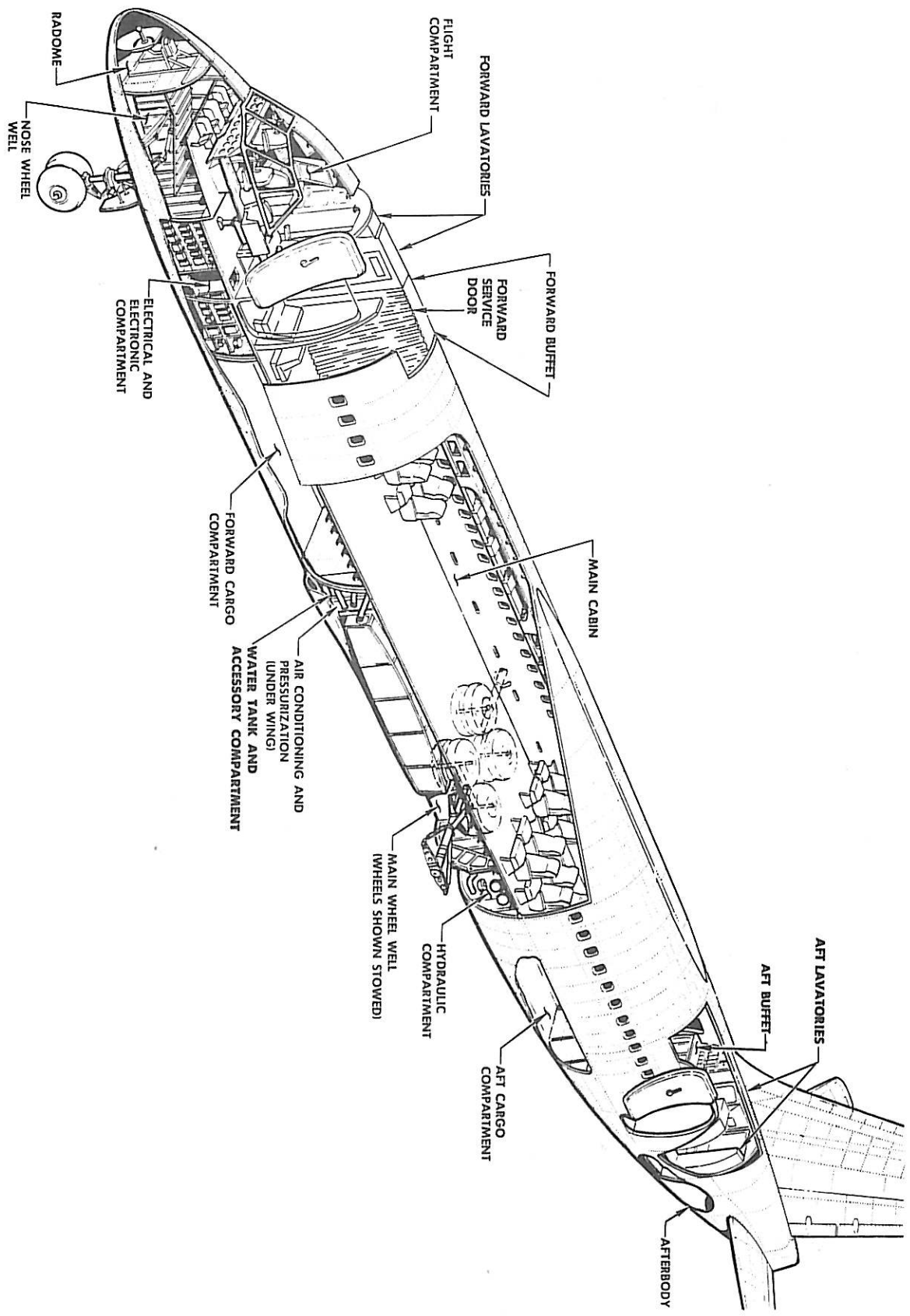


EFFECTIVITY	
APPLICABLE TO AIRPLANES	
APPLICABLE TO AIRPLANES	
EQUIPPED WITH BAGGAGE	
DOOR	

NOTES:

1. ALL SKIN PANELS ARE 2024 ALUMINUM ALLOY UNLESS OTHERWISE NOTED.
2. SKIN PANELS WHERE TWO SKIN GAGES SHOWN ARE A = DYNAMIC ETCHED OR B = MACHINED TAPERED.
3. THICKNESS OF DYNAMIC ETCHED AND MACHINED TAPERED PANELS WILL VARY BETWEEN SKIN GAGES GIVEN ON ILLUSTRATION.

30 30 53 001 A



3. Nose Wheel Well

The nose wheel well houses the dual-wheel, steerable nose landing gear in flight, and provides access to various ground servicing points. To retain aerodynamic smoothness, contoured forward doors cover the wheel well area when the landing gear is extended or retracted. During gear extension, the forward nose landing gear doors open to allow the gear to extend, then close again, while the nose landing gear aft fairing closes and opens with the gear. Conversely, the doors open for gear retraction, then close again after the gear is completely retracted. The forward nose landing gear doors may be disconnected and opened on the ground for access to the nose wheel well area; refer to Chapter 32, LANDING GEAR.

4. Electrical and Electronic Compartments

The electrical and electronic equipment is housed in a compartment located just aft of the nose wheel well and below the cabin floor. All equipment is mounted in racks that are positioned on all sides of the area. During flight, access to the area is obtained through an access door in the forward coat closet floor; on the ground, through a plug-type, inward-opening access door in the bottom forward portion of the fuselage. Electrical equipment is also installed in a "tunnel" along the fuselage outboard of and on each side of the nose wheel well. Access to these "tunnels" is through an inward-opening door on each side of the fuselage and an inward-opening door in the top of the nose wheel well.

The air conditioning system distributes cooling air to the electrical and electronic compartment to dissipate heat generated by the electrical and electronic equipment. In addition, an electric-motor-driven electronic equipment cooling fan is used when the air conditioning system airflow is insufficient for proper equipment cooling.

5. Flight Compartment

The flight compartment is located directly above the nose wheel well and the electrical and electronic compartments. This compartment provides accommodations for the flight crew. Individual flight instrument panels and a single center engine instrument panel are provided for the pilot and copilot.

Other instruments and controls are mounted on the right and left consoles, the pedestal, and the overhead switch panel. The flight engineer's seat and control panel is mounted on the right side of the compartment directly aft of the copilot. The pilots' seats are on the elevated portion of the flight compartment floor; the flight engineer and other crew members' seats are on the lower floor level, even with the passenger cabin floor. The aft end of the pilot's console has oxygen, audio and table light control provisions.

The flight compartment is enclosed with a three-piece windshield and sliding and stationary side windows. The three windshield panels are electrically anti-iced and anti-fogged; the side windows are electrically anti-fogged. Windshield rain clearing is accomplished by directing engine bleed

air in a plane parallel to the windshield outer surface. Rain clearing bleed air outlets are provided for the pilots' main windshields.

6. Cargo Compartments

Two cargo compartments are located below the passenger cabin floor; the forward cargo compartment is located directly aft of the electrical and electronic compartment; the aft cargo compartment is located aft of the hydraulic compartment. Plug-type inward opening doors on the lower right side of the fuselage provides access for loading or unloading cargo. Lights on the compartment overhead provide illumination for servicing personnel.

7. Water Tank and Accessory Compartment

The water tank and accessory compartment is located below the cabin floor between the aft end of the forward cargo compartment and the wing front spar. This compartment contains two electric motor-driven air compressors, the water storage tank and its associated valves. Access to the compartment is through zippered openings in the partition at the aft end of the forward cargo compartment.

8. Air Conditioning Compartment

The main components of the air conditioning system are located in the air conditioning compartment (plenum chamber) just aft of the water tank and accessory compartment and below the wing center section tie-box. The Freon refrigeration system, cabin turbocompressor units and associated ducts and valves are all located in this area. Air scoops for the air conditioning system ram air are located on the lower right and left sides of the fuselage at the forward end of the air conditioning plenum chamber. Three pairs of access doors, in the lower surface of the fuselage on each side of the center line, provide access for servicing and maintenance of the air conditioning system components; the forward pair of doors to the cabin turbocompressor; the center doors to the cabin air-to-air heat exchanger. Access to the Freon refrigeration package is through the aft pair of doors.

9. Main Landing Gear Wheel Wells

The main landing gear wheel wells are located just aft of the wing center section tie-box and below the passenger cabin floor. Contoured doors cover the wheel wells when the landing gears are extended or retracted to retain aerodynamic smoothness.

10. Hydraulic Compartment

The hydraulic compartment is just aft of the main landing gear wheel wells and below the passenger cabin floor. The majority of the hydraulic system components are located there to provide a centralized servicing point. A plug-type, inward opening access door is located on the lower left side of the fuselage just aft of the main wheel well; hydraulic system ground test and servicing connections are located just inside the access door.

11. Passenger Cabin

The passenger cabin extends aft from the flight compartment partition to the aft fuselage pressure bulkhead at station 1487.95. The forward and aft cabin areas contain bunks and lavatory facilities. Seating accommodations, lounge areas, oxygen and fresh air facilities, reading lights, and an attendant call system are included for the passengers. All upholstery and trim materials are such that they will not readily stain and can be safely cleaned as directed in Chapter 25, EQUIPMENT/FURNISHINGS. In addition to the two main entrance doors and two service doors, an emergency exit is located on each side of the cabin, over the wing.

12. Aft Fuselage

The fuselage aft section extends from fuselage station 964 to the aft fuselage tip at station 1717. This area houses the various control system components that actuate the elevator and rudder surfaces, and the adjustable horizontal stabilizer. The horizontal stabilizer interspar assembly, which passes through skin cutouts on each side of the fuselage aft section, has a travel of 2.5 degrees nose up and 15.5 degrees nose down from the neutral position. Vertical stabilizer-to-fuselage attach fittings are located in the upper surface for vertical stabilizer attachment. Access to the fuselage interior, aft of the pressure bulkhead, is through two doors; one located just aft of the aft pressure bulkhead on the lower left side of the fuselage, the other on the fuselage bottom centerline, near the aft tip.





MAINTENANCE MANUAL

FUSELAGE - TROUBLE SHOOTING

ISOLATION PROCEDURE AND CORRECTION

1. FUSELAGE PRESSURIZATION CANNOT BE MAINTAINED

A. Pressurization system is not operating properly.

Refer to Chapter 21, AIR CONDITIONING, for trouble shooting.

B. Leaks in the corners, faying surfaces, rivet holes, door seals, ruptured skins, etc, in the fuselage areas or the pressure bulkheads.

Pressurize the fuselage as directed in Chapter 21, AIR CONDITIONING, then apply bubble fluid (MIL-S-4282) or castile soap solution to the exterior fuselage gaps, skin butt joints, or suspected areas of leakage. Bubbles will be evident where leaks exist. Wash off bubble or soap with clean fresh water, wipe dry. Repair leaks with sealants as directed in Chapter 51, STRUCTURE-GENERAL. Station a mechanic equipped with a sealant repair materials and a stethoscope or rubber tube inside the cabin or flight compartment. Slowly pressurize the compartment as directed in Chapter 21, AIR CONDITIONING, to 8.2 psi. The mechanic may now locate the leaks on the inside by moving the stethoscope or rubber tube along the seams in the structural areas, listening for a whistling sound when the tube is moved over a leak.

Repair leaks as shown in Chapter 51, STRUCTURE-GENERAL, until it is no longer possible to detect any leaks. After all leaks are repaired the cabin may be depressurized and normal air-conditioning and pressurization restored.



CONVAIR MODEL 30 MAINTENANCE MANUAL

STRUCTURE - FORWARD FUSELAGE AREA - DESCRIPTION AND OPERATION

1. General

The forward fuselage area and nose section of the airplane as shown in Figure 1 is that portion of the fuselage forward of the wing front spar attachment bulkhead at fuselage station 678. Major structural components include the radome, forward pressure bulkhead, nose landing gear box structure, the flight compartment windshield and window supporting structure, beltframes, and skin panels.

2. Nose Radome Construction

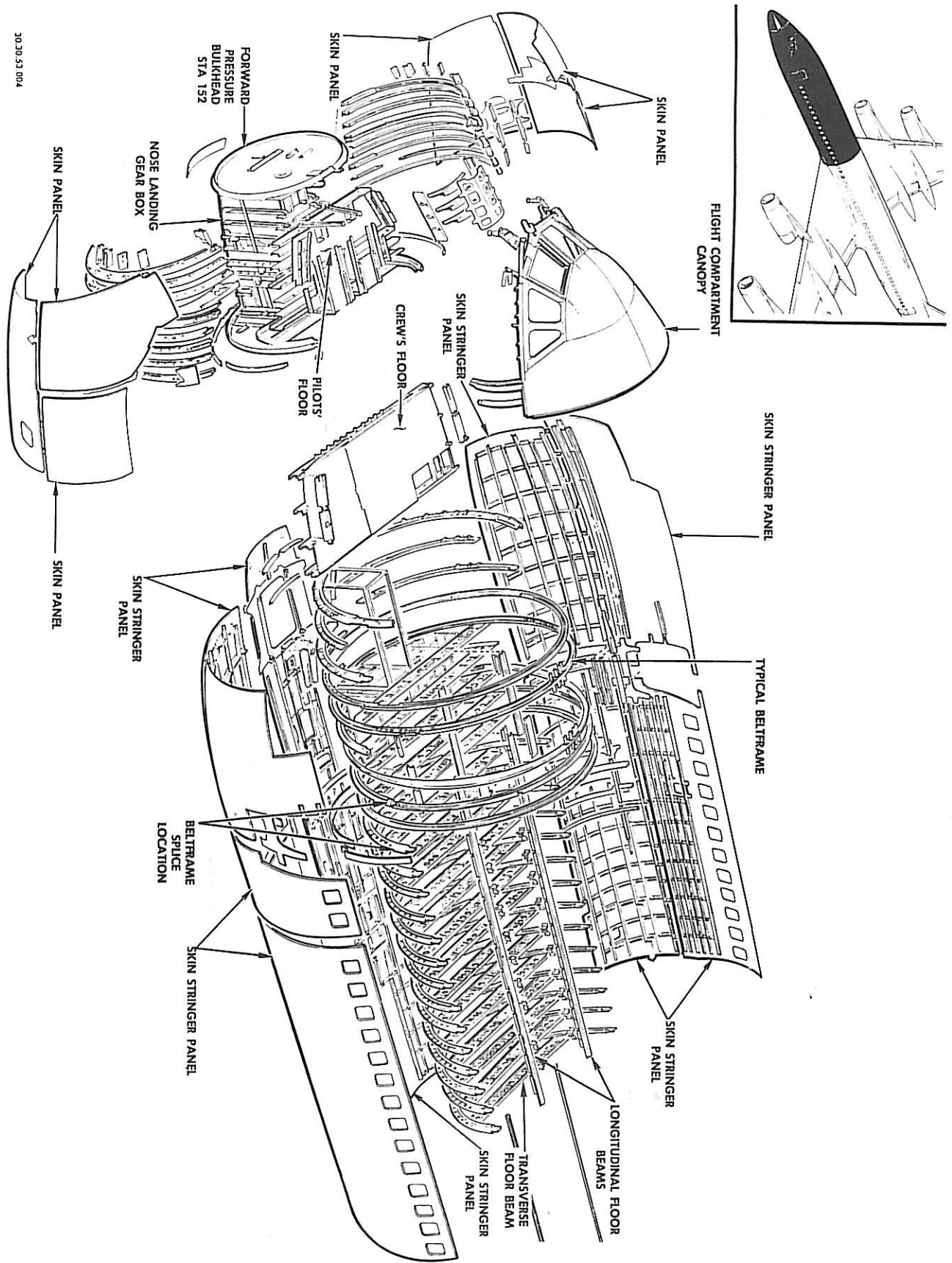
The radome is constructed of solid, step-wall, fiberglass-reinforced, epoxy plastic laminate. The wall thickness of the radome varies from 0.090-inch at the base or aft section to 0.070-inch at the nose section. The exterior covering includes a rain erosion shoe, which covers the forward sixteen inches of the nose section. A sprayed-on, 0.010-inch thick, antistatic protective coating covers the remaining radome exterior; see Figure 2.

3. Forward Pressure Bulkhead

The forward pressure bulkhead is located at fuselage station 152 and forms the extreme forward end of the flight compartment and the nose wheel well. This pressure bulkhead is of built-up construction consisting of a circular 2024 aluminum alloy sheet, with 2024 "J" section stiffeners spaced about nine inches apart. An extruded "T" cap is riveted around the edge of the bulkhead. This "T" cap is made of 2024 aluminum alloy, except for a short section of 7075 aluminum alloy in the nose wheel well area. An airplane jack fitting, machined from 7079 aluminum alloy plate, is also provided on the bottom centerline of the pressure bulkhead.

4. Nose Landing Gear Box Structure

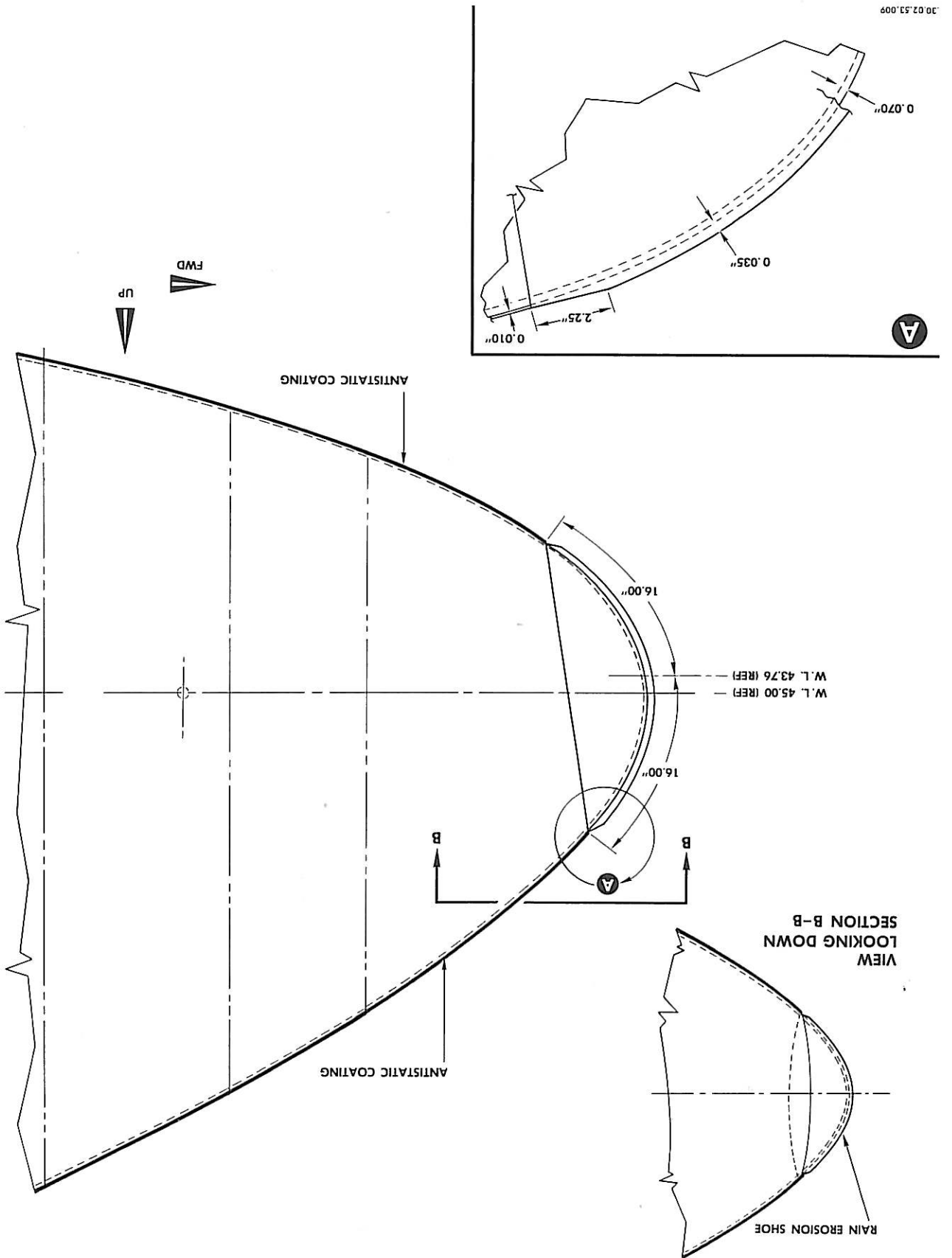
The nose landing gear box is about 31 inches in height and extends aft from the forward pressure bulkhead at fuselage station 152 to fuselage station 250. The vertical sides of the box act as support beams to distribute nose landing gear main trunnion and drag trunnion loads, as well as internal pressurization loads from the upper surface of the box into the fuselage structure. Each side of the nose landing gear box is of built-up construction and consists of an extruded 7178 aluminum alloy top and bottom cap with 2024 web. The landing gear box upper surface web is also 2024 aluminum alloy. Stiffener spacing along the nose landing gear box is about nine inches apart. Typical stiffeners are extruded "J" sections, three inches deep made from 2024 aluminum alloy. The landing gear trunnion fittings are machined from 7075 aluminum alloy. The nose landing gear up-lock lateral support beams are 7075 aluminum alloy; the nose landing gear bumper lateral supports are 2024 material.



Forward Fuselage Section Structure
Figure 1

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AB-1

30-30-53 004



Feb. 1/62 AB-2
Nose Radome Rain Erosion Shoe Location
Figure 2



5. Flight Compartment Windshield and Window Supporting Structure

The flight compartment windshield and window supporting structure consists of an upper window longeron and a lower window longeron interconnected by window posts. In addition, two longerons extend aft from the forward pressure bulkhead to fuselage station 289 and interconnect the upper and lower window longeron. These two fore and aft longerons also serve as window posts in the region along each side of the center windshield. The fore and aft longerons are formed 2024 aluminum alloy, except in the window post regions; these are machined from 2014 hand-forged billets.

The upper window longeron is "horse shoe" shaped and wraps around the upper edge of the flight compartment windows and aft to fuselage station 289. The longeron is fabricated from a basic extruded section, a rolled angle, and an extruded section containing the sliding window tracks. All parts are 2024 aluminum alloy.

The lower window longeron forms a continuous beam around the lower edge of the windows, and is fabricated from a basic extruded section, two rolled angles and extruded sliding window tracks. The sliding window tracks are of 7075 aluminum alloy; the other parts are 2024 material.

The window posts are 2014 hand-forged billets and 2024 extrusions. The average post cross-section is "J" and is less than three inches deep. Except for the bolted splices at the upper ends of side main windshield posts and the riveted splices at the upper ends of the center windshield posts, dagger fittings are employed at all window post splice locations. Typical window post splicing is accomplished by splicing the inboard flange with a dagger and the outboard flange with rivets through the legs of the upper and lower window longerons.

6. Beltrames

The typical beltrame cross-section in the forward fuselage area is a "Z" section with a depth of 3.5 to 4 inches and a minimum gage of 0.050 inch. Beltrame spacing from the forward pressure bulkhead and aft to the aft end of the flight compartment windows is nine inches; frame spacing from the windows to the flight compartment aft partition is 19 inches. Half-frames are also employed above the flight compartment floor which again reduce frame spacing to approximately nine inches in the flight compartment area.

7. Skin Panels

All external skins in the forward fuselage area are 2024 and 2024 clad aluminum alloy. Skin gages range from 0.060 to 0.100 inch above the flight compartment windows, and from 0.060 to 0.080 inch in the remaining areas of the forward fuselage as shown in 53-0, Figure 2.



8. Stringers

The fuselage longitudinal stringers are extruded "Z" sections of 2024 and 7075 aluminum alloy.

Shear clips provide stringer attachment to fuselage beltframes from 20 inches below the cabin floor to 12 inches above the cabin floor, on each side of the fuselage. The stringers in the upper and lower portions of the fuselage are attached directly to the beltframes with rivets.

The stringers on the lower portion of the fuselage are numbered from one to 15, starting with number one at the bottom centerline of the fuselage and extending up to stringer number 15 which is 15 inches below the cabin windows. Intermediate stringers are also located in the lower portion of the fuselage between stringers two through four forward of the wing, and between stringers one through nine aft of the wing; the forward intermediate stringers are numbered 1-9/16, 2-1/2 and 3-1/2; the aft intermediate stringers are numbered 1-1/2, 2-1/2, 3-1/2, etc., through stringer number 8-1/2. The stringers on the upper portion of the fuselage are numbered 21 through 27, starting with number 21 at the top and extending down each side to stringer number 27 which is 40 inches above the cabin windows. There are no stringers used in the cabin window area except at the skin splice. In general, stringers number 9 through 17 and some stringers just aft of the nose wheel well are 2024 aluminum alloy; all other stringers are 7075 aluminum alloy.



MAINTENANCE MANUAL

STRUCTURE-FORWARD FUSELAGE - MAINTENANCE PRACTICES

1. Inspection/Check Forward Fuselage Area

At regular intervals a general check of the following forward fuselage structures should be made:

- A. Check all exterior skins for cracks, corrosion, distortion, pulled or missing fasteners, and acceptable faying surface weather sealants.
- B. Check stringers, beltframes, and adjacent structures for cracks, distortion, corrosion, and pulled or missing fasteners.
- C. Check the nose wheel well structure for cracks, distortion, proper door clearances and gaps, corrosion, and pulled or missing fasteners.

2. Cleaning/Painting

- A. All structures must be kept free from contaminants or materials that could damage the metals. Clean off all such substances in accordance with Chapter 51, STRUCTURES-GENERAL.
- B. Paint all surfaces requiring touch-up or major finish repairs in accordance with Chapter 51, STRUCTURES-GENERAL.

3. Approved Repairs

- A. Replace or repair damaged sealants as directed in Chapter 51, STRUCTURES-GENERAL.

- B. Repair damaged skins or structure with temporary repairs as directed in Chapter 51, STRUCTURES-GENERAL, or with permanent repairs as shown in the Structural Repair Manual.

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MAINTENANCE MANUAL

NOSE RADOME - MAINTENANCE PRACTICES

1. Removal/Installation Nose Radome (see Figure 201)

A. Equipment Required.

- (1) Suitable stand, platform, or cradle to support the radome.

B. Preparation.

Open and attach warning tag on the following circuit breakers on the main circuit breaker panel at station 298.

- (1) WX radar AC circuit breaker.

- (2) WX radar DC circuit breaker.

WARNING: THE VOLTAGE DEVELOPED IN THE RADAR EQUIPMENT IS HIGH ENOUGH TO BE DANGEROUS OR FATAL UPON CONTACT; AND DIRECT EXPOSURE TO THE RADIO FREQUENCY BEAM FROM THE ANTENNA MAY BE INJURIOUS.

C. Remove Radome.

- (1) Unlatch one bottom and two side radome latches by fully depressing the plunger and rotating it one-half turn to the UNLOCKED POSITION.
- CAUTION: FAILURE TO FULLY DEPRESS THE PLUNGER MAY RESULT IN DAMAGE TO THE LATCH ASSEMBLY.

- (2) Swing the radome up and insert the safety pins in the hinged supporting structures at each side of the radome.

- (3) Remove two bolts attaching hinge pin retainer and remove retainer. Disconnect bonding jumper at top of radome.

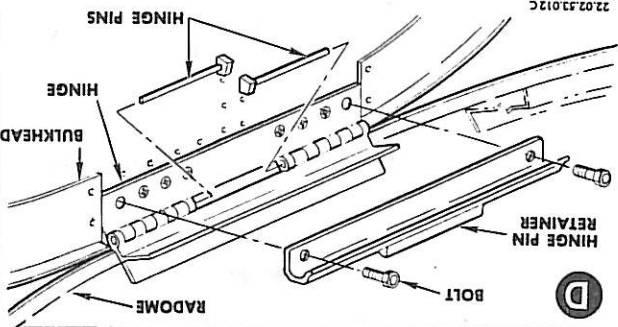
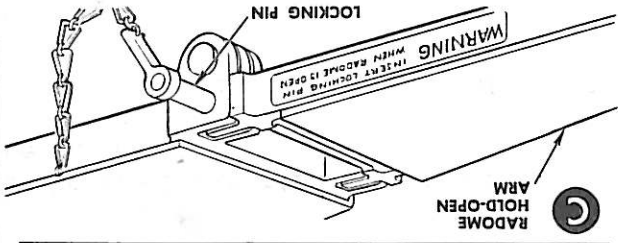
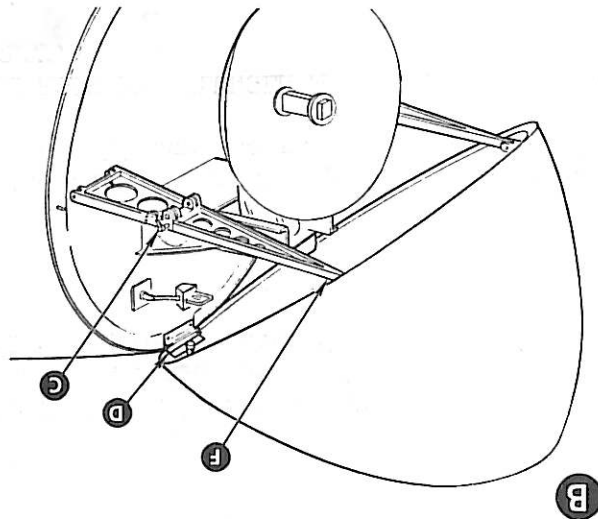
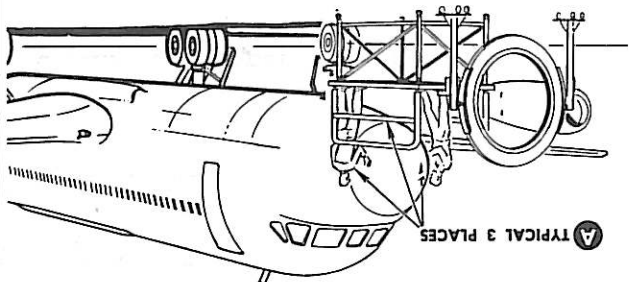
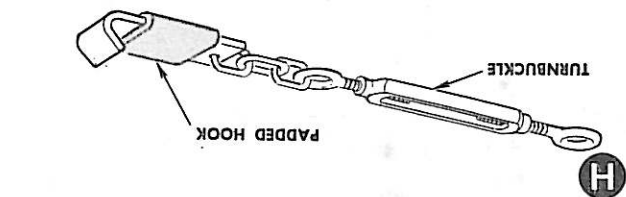
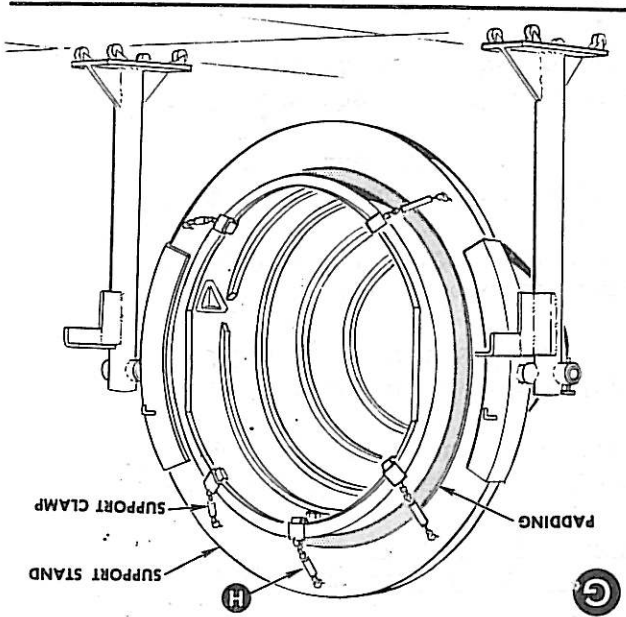
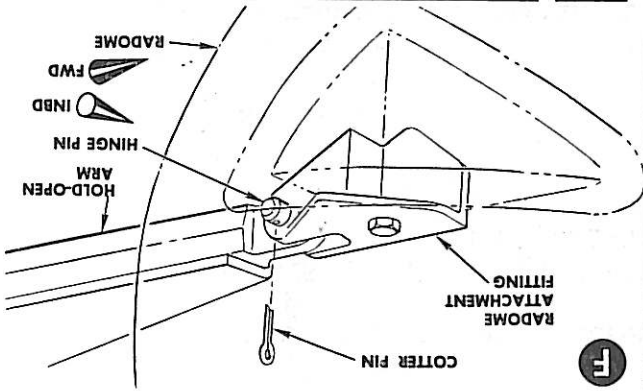
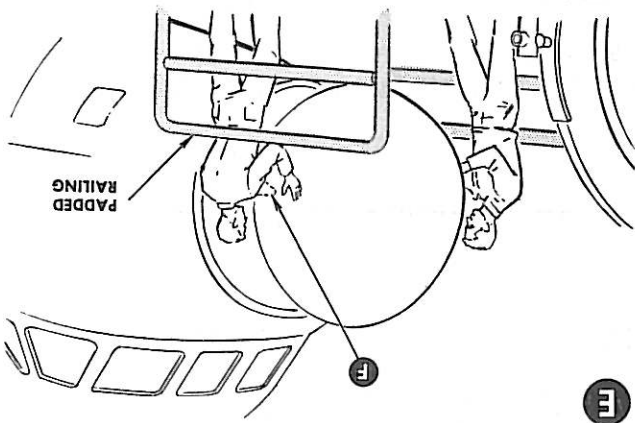
- (4) Support the radome and remove the two hinge pins from the radome hinge at the top center of the radome.

- (5) Let the radome down carefully and allow it to rest on a suitable supporting stand.

- (6) Remove the two bolts that secure the hinged supporting structures at the sides of the radome.

D. Install Radome.

- (1) Carefully move the radome into position on a cradle or other supporting platform, or stand.



- (2) Attach the two hinged supporting structures on the forward pressure bulkhead to the attachment fitting holes at the sides of the radome.
- (3) Make sure that the safety pins of the supporting structures, or arms, are in place holding the arms rigidly extended.
- (4) Carefully swing the radome upward and back so the hinge fittings coincide, and insert the hinge pins.
- (5) Install hinge pin retainer with two bolts.
- (6) Remove safety pins from supporting arm hinges, and lower radome.
- (7) Secure one bottom and two side radome latches by fully depressing the plunger and rotating it one-half turn to the LOCKED POSITION. When locked, the plunger should be flush with the radome surface.

CAUTION: FAILURE TO FULLY DEPRESS THE PLUNGER MAY RESULT IN DAMAGE TO THE LATCH ASSEMBLY.

- (8) Connect bonding jumper at top of radome.
- (9) Close circuit breakers opened in preparation procedure and remove warning tags.

2. Removal/Installation Rain Erosion Shoe

A. Equipment Required.

- (1) Methyleneketone, (M.E.K.) Specification TT-M-261, or equivalent.
- (2) Naphtha, aliphatic, Specification TT-N-95a, or equivalent.
- (3) EC-1300 adhesive, 3M Co., St. Paul 6, Minn., or equivalent.
- (4) EC-801 sealer, 3M Co., St. Paul 6, Minn., or equivalent.
- (5) EC-807 accelerator, 3M Co., St. Paul 6, Minn., or equivalent.

B. Preparation.

- (1) None.

C. Remove Rain Erosion Shoe.

- (1) Remove EC-801 sealer located at the aft end of the rain erosion shoe, by carefully sanding with 180 grit sandpaper.

CAUTION: USE CARE NOT TO SAND INTO THE UNDERLYING FIBERGLAS RADOME SURFACES.



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- (2) If removal of the EC-801 sealer does not expose enough of the rain erosion shoe edge for a hand hold, use a razor blade or sharp knife and at the aft end of the rain erosion shoe, cut two 6-inch slits, one on each side of the rain erosion shoe for a hand hold.

CAUTION: WHEN CUTTING RAIN EROSION SHOE, USE EXTREME CARE NOT TO CUT OR SCORE THE UNDERLYING FIBERGLAS RADOME SURFACES.

- (3) Using the exposed edges of the rain erosion shoe, or the slits cut in step (2), pull the rain erosion shoe off the tip of the radome. If the rain erosion shoe will not separate from the radome, the EC-1300 adhesive may be softened by using clean cheese cloth moistened with methyl ethyl ketone (M.E.K.) and dampening the area between the rain erosion shoe and the radome, as the area becomes exposed while pulling on the rain erosion shoe.

CAUTION: DO NOT USE EXCESSIVE AMOUNTS OF M.E.K. ON FIBERGLAS SURFACES. KEEP SURFACES FREE OF M.E.K. BY AN OCCASIONAL WIPING OF THE AREA WITH A CLEAN CHEESE CLOTH MOISTENED WITH ALIPHATIC NAPHTHA.

D. Install Rain Erosion Shoe.

- (1) Remove excess bonding adhesive and other contaminants by carefully sanding the radome surfaces from the tip to approximately 12 inches aft, with No. 320 sandpaper. Avoid sanding into the radome fiberglass surfaces.

- (2) Clean entire sanded area with clean cheese cloth moistened with M.E.K. followed by wiping the area with clean cheese cloth moistened with aliphatic naphtha.

CAUTION: A CLEAN SURFACE IS MANDATORY FOR AN EFFECTIVE BOND. AREA TO BE BONDED MUST BE FREE OF ALL CONTAMINANTS.

- (3) Replace antistatic black tape as required.

- (4) Turn the rain erosion shoe inside out and clean the inner surface with clean cheese cloth moistened with aliphatic naphtha.

- (5) Apply a smooth coating of EC-1300 adhesive, 2 to 4 mils thick, to the sanded area of the radome and to the inner surface of the rain erosion shoe.

- (6) Place the rain erosion shoe (reversed in step 4) on the tip of the radome; using hand pressure press into place and at the same time return it to its original shape. From the forward end, work out all wrinkles and air bubbles while installing the rain erosion shoe.

(7) Mix EC-801 and EC-807 in accordance with manufacturer's instructions.

(8) Apply EC-801 fillet around the aft lap joint of the rain erosion shoe; overlapping the rain erosion shoe and the area aft of the rain erosion shoe by one-half inch. Smooth to contour.

(9) Air cure rain erosion shoe and the EC-801 fillet for 24 hours.

(10) As required, touch up antistatic protective coating as directed in Chapter 51, STRUCTURES GENERAL.

3. Inspection/Check - Nose Radome

A. Check radome exterior surfaces for delaminations, cracks, punctures, erosion, and general condition.

B. Check hinges, latches, seals, and rain erosion shoe for security and general condition.

4. Cleaning/Painting

A. Radome exterior surfaces must be kept free from contaminants or materials that may be harmful to the antistatic protective coating or the fiberglass radome shell. Clean off such substances as directed in Chapter 51, STRUCTURES GENERAL.

B. Refinish all surfaces requiring touch up as directed in Chapter 51, STRUCTURES GENERAL.

5. Approved Repairs

A. Replace or repair antistatic coatings as directed in Chapter 51, STRUCTURES GENERAL.

B. Repair damaged radome fiberglass surfaces as directed in the Structural Repair Manual.





MAINTENANCE MANUAL

STRUCTURE - OVERWING FUSELAGE - DESCRIPTION AND OPERATION

1. General

The overwing fuselage area extends from fuselage station 678 to station 964. Equipment compartments and the wing center section tie-box are located below the floor in the overwing fuselage area of the fuselage. Major structural components include typical bellframes, longitudinal stringers, skin panels, and an external longeron along the bottom centerline of the fuselage. Special bellframes are located at the wing front and rear spar locations along with a special bulkhead at the main landing gear beam attachment. Also included is the main wheel well structure. See Figure 1 for an illustration of the overwing fuselage section structure.

2. Typical Bellframes

The typical bellframes over the wing consist of a 2024 extruded "T" section inner flange and a 7075, rolled angle web and fuselage skin attachment flange. Both of these sections are stretch-formed to the contour of the fuselage. The bellframe outer flange is riveted directly to the fuselage skin and includes cutouts to pass the stringers. The outer flange is also joggled to fit on the inboard side of the wing-to-fuselage drag tee; the fuselage skin is attached to the outboard face of the drag tee. The web portion of each overwing bellframe attaches to dragger-type fittings on the wing upper surface to provide bellframe continuity through the wing.

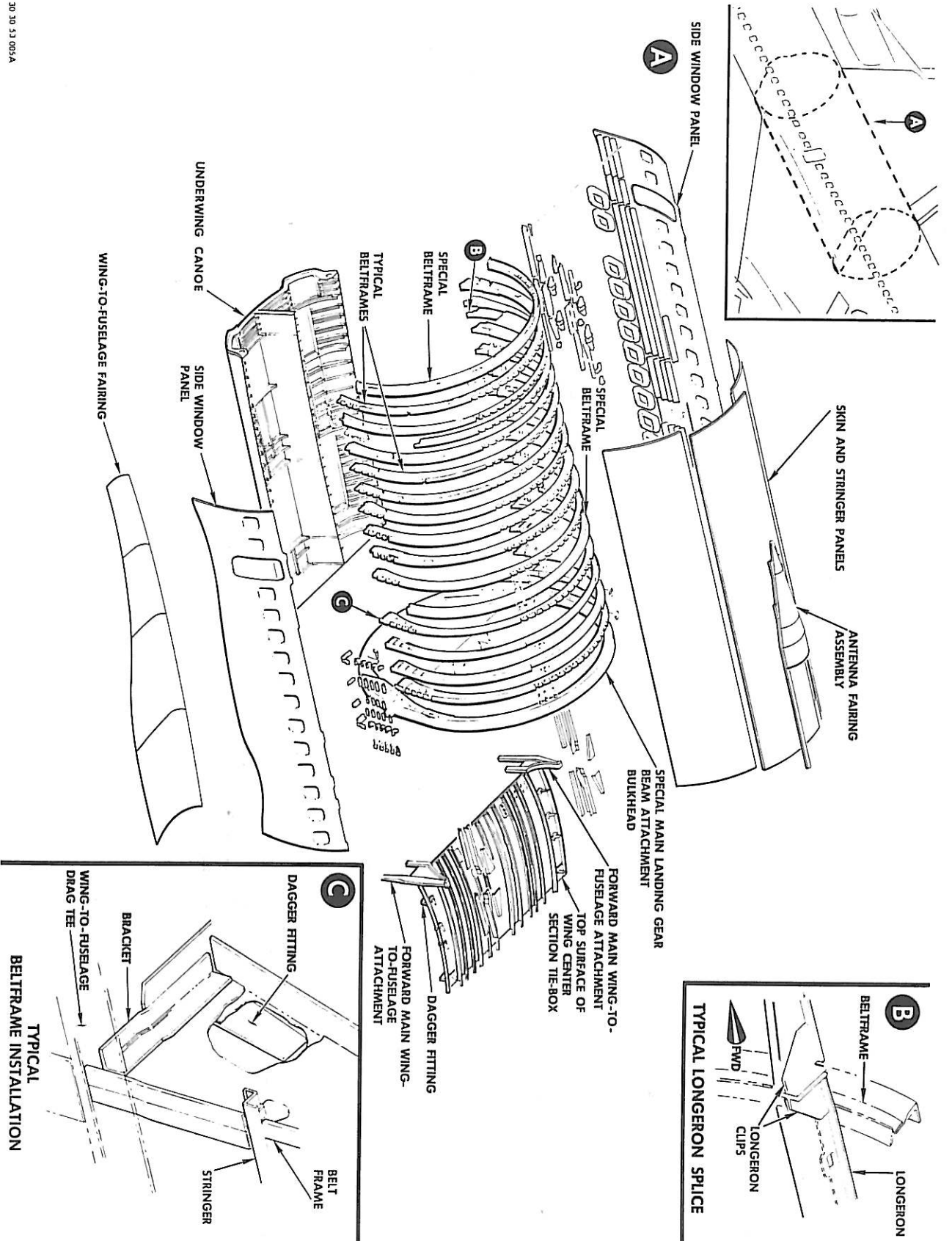
3. Stringers

The fuselage longitudinal stringers are extruded "Z" sections of either 7075 or 2024 aluminum alloy. The basic stringers are 7/8-inch deep with 5/8-inch wide flanges.

Special one-inch-deep stringers are used in the area just above the wing and below the cabin windows, on each side of the fuselage. Shear clips provide stringer attachment to fuselage bellframes from 20 inches below the cabin floor to 12 inches above the cabin floor, on each side of the fuselage. The stringers in the upper and lower portions of the fuselage are attached directly to the bellframes with rivets.

The stringers on the lower portion of the fuselage are numbered from one to 17, starting with number one at the bottom centerline of the fuselage and extending up to stringer number 17 which is 15 inches below the cabin windows. Intermediate stringers are also located in the lower portion of the fuselage between stringers one through nine aft of the wing, and between stringers one through nine aft of the wing; the forward intermediate stringers are numbered 1-9/16, 2-1/2 and 3-1/2; the aft intermediate stringers are numbered 1-1/2, 2-1/2, 3-1/2, etc., through stringer number 8-1/2. The stringers on the upper portion of the fuselage are numbered 21 through 27, starting with number 21 at the top and extending down each side to stringer number 27 which is 40 inches above the cabin windows. There are no stringers used in the cabin window area except at the skin splice. In

30 30 53 005A



General, stringers number 9 through 17 and some stringers just aft of the nose wheel well are 2024 aluminum alloy; all other stringers are 7075 aluminum alloy.

4. Skin Panels

The fuselage skins in the overwing fuselage area are 2024 clad aluminum alloy and range from 0.040 inch thick below the wing in the unpresurized "canoe" section up to a maximum of 0.244 inch in the area above the wing as shown in 53-0, Figure 2. The minimum skin thickness used in the pressurized portion of the overwing fuselage area is 0.063 inch. (The minimum skin gage in the pressurized area of the complete fuselage is 0.060 inch. This 0.060 inch material is used in areas of smaller contour radii, such as the forward fuselage area.)

There are two chemically milled skin panels and three roll-tapered panels located in the fuselage area above the wing and main wheel wells. These panels provide optimum strength with minimum weight characteristics. The two "chem-milled" panels are located directly above the wing and contain the cabin cutouts. The three roll-tapered panels cover the remaining upper portion of the fuselage above the wing. All transverse skin splices are butt-type joints that provide a smooth, low-drag surface. Longitudinal skin splices are lap-type joints with the upper skin overlapping the lower skin, single style.

5. Fuselage Bottom Centerline External Longeron

The main compression skin-stringer combination below the floor is interrupted by the wing and main wheel wells. An extruded external longeron carries the compression loads across this area. This longeron is 7178 aluminum alloy and extends along the bottom centerline of the airplane from a point just forward of the wing (fuselage station 527) to fuselage station 1229.90. At fuselage station 1229.90, a 7075 longeron is spliced on and continues aft to fuselage station 1412.48. At the forward end of the extruded longeron, compression loads are transferred into two secondary longérons, which terminate at the forward cargo compartment door location at fuselage station 489. The aft end of the extruded main longeron is spliced with a typical stringer.

6. Special Beltrames

Special extruded "I" section beltrames are provided at the wing front and rear spar attachments to the fuselage. These beltrames are about 3-1/8 inches deep and made of 7075 aluminum alloy for the rear spar and 2024 for the front spar, stretch-formed to the contour of the fuselage. The outer flange of the beltrame "I" section is riveted directly to the fuselage skin. The outer flange also acts as a transverse skin splice on the special beltrame located at the wing front spar; the beltrame at the wing rear spar has no splice provisions. The fuselage stringers splice to the outer flange of the special beltrames through forged dagger-type fittings. The lower ends of the beltrames are spliced into 2014 aluminum alloy machined forgings which are attached to the wing front and rear spars in a shear fashion.



7. Main Landing Gear Beam Attachment Bulkhead

A special bulkhead at the main landing gear beam attachment to the fuselage consists of an extruded "I" section upper ring, a machined fitting on each side, and a lower web section with vertical stiffeners. The upper portion is a stretch-formed 7075 aluminum alloy "I" section about 3-1/8 inches deep; its outer flange is riveted directly to the fuselage skin and also acts as a transverse skin splice. The fittings on each side of the special belt-frame are machined from 7079 aluminum alloy forged billets and splice to the upper portion and to a flange on the lower web section. Two lugs in each fitting match with lugs on the main landing gear beams.

The lower web section consists of two webs; an 0.071-inch 2024 web on the bottom and an 0.090-inch 7075 section on top with an extruded 7178 upper flange and an extruded 7075 lower flange. Built-up vertical stiffeners tapering from three inches deep at the bottom to six inches deep at the top are also provided. The lower flange acts as a bearing ledge for the main landing gear doors on the forward side and is riveted to the fuselage skin on the aft side. The built-up vertical stiffeners consists of a 2024 tapered tee flange riveted to the bulkhead web section and an aft tee flange of 2024 aluminum alloy interconnected by a 2024 web.

8. Main Landing Gear Wheel Wells

The main landing gear wheel wells are formed on the fore and aft sides by the wing rear spar and the main landing gear beams and attachment bulkhead. A horizontal web forms the roof of the wheel wells; a vertical web on the centerline of the airplane separates the left and right wheel wells.

The wheel well roof is 2024 sheet attached to an angle on the wing rear spar upper rail and the upper flange of the main landing gear beam bulkhead. The fore and aft floor beams in the fuselage above the wheel wells also support the roof. The vertical centerline web is of conventional construction. Its web is 2024 aluminum alloy. The stiffeners are 7075 "Z" sections 1-1/2 inches deep and are attached to both sides of the web with a 10 inch spacing.

9. Underwing Canoe

The underwing canoe section extends aft from fuselage station 660 to station 866. Construction is of the conventional built-up type using exterior skins and internal ribs, formers, and longerons. Much of the lower section of the canoe consists of access doors for the heat exchanger, turbocompressor, and refrigeration package, which are housed within. The major structural component of the canoe is the external longeron at the bottom centerline. The longeron is attached to the wing lower surface with a beam assembly which extends upwards through the canoe section.



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10. Wing-to-Fuselage Fairings

Wing-to-fuselage fairings are attached to the fuselage skins and the wing upper surface skins. These fairings extend from the wing leading edge at the wing trailing edge. These fairings are of built-up construction consisting of dynamically-etched skins with internal ribs, formers, and longeron sections. The fairings are attached with AN509 screws.

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AB-1





MAINTENANCE MANUAL

STRUCTURE - OVERWING FUSELAGE - MAINTENANCE PRACTICES

1. Inspection/Check - Overwing Fuselage

Check the following overwing fuselage structure at regular intervals:

- A. Structure adjacent to the passenger cabin windows for cracks, distortion, corrosion, and pulled or missing fasteners.
- B. All skins for acceptable raying surface weather sealants, pulled or missing fasteners, distortion, corrosion, and cracks.
- C. Stringers, belttrusses, longerons, and special bulkheads for pulled or missing fasteners, distortion, corrosion, and cracks.
- D. Structure in the wing center section tie-box for cracks, corrosion, distortion, and pulled or missing fasteners.

2. Cleaning/Painting

- A. Keep all structure free from contaminants or materials that could damage the metals. Clean off all such substances in accordance with Chapter 51, STRUCTURES - GENERAL.
- B. Paint all surfaces requiring touch-up or major finish repairs in accordance with Chapter 51, STRUCTURES - GENERAL.

3. Approved Repairs

- A. Replace or repair damaged sealants as directed in Chapter 51, STRUCTURES - GENERAL.

- B. Repair damaged skins or structure with temporary repairs as directed in Chapter 51, STRUCTURES - GENERAL, or with permanent repairs as shown in the Structural Repair Manual.

1. General

The aft fuselage area extends aft from fuselage station 964 to fuselage station 1717 (see Figure 1). This area consists of several special bulkheads which support the horizontal and vertical stabilizers, etc., typical bellcranks, and stringer-skin panels. The fuselage tailcone assembly which terminates at the extreme aft end of the fuselage at fuselage station 1717 is also included. Since the vertical stabilizer structure straddles the cabin pressure bulkhead, the vertical stabilizer front spar attachment bulkhead (fuselage station 1439) is also included in this part of the fuselage structure description.

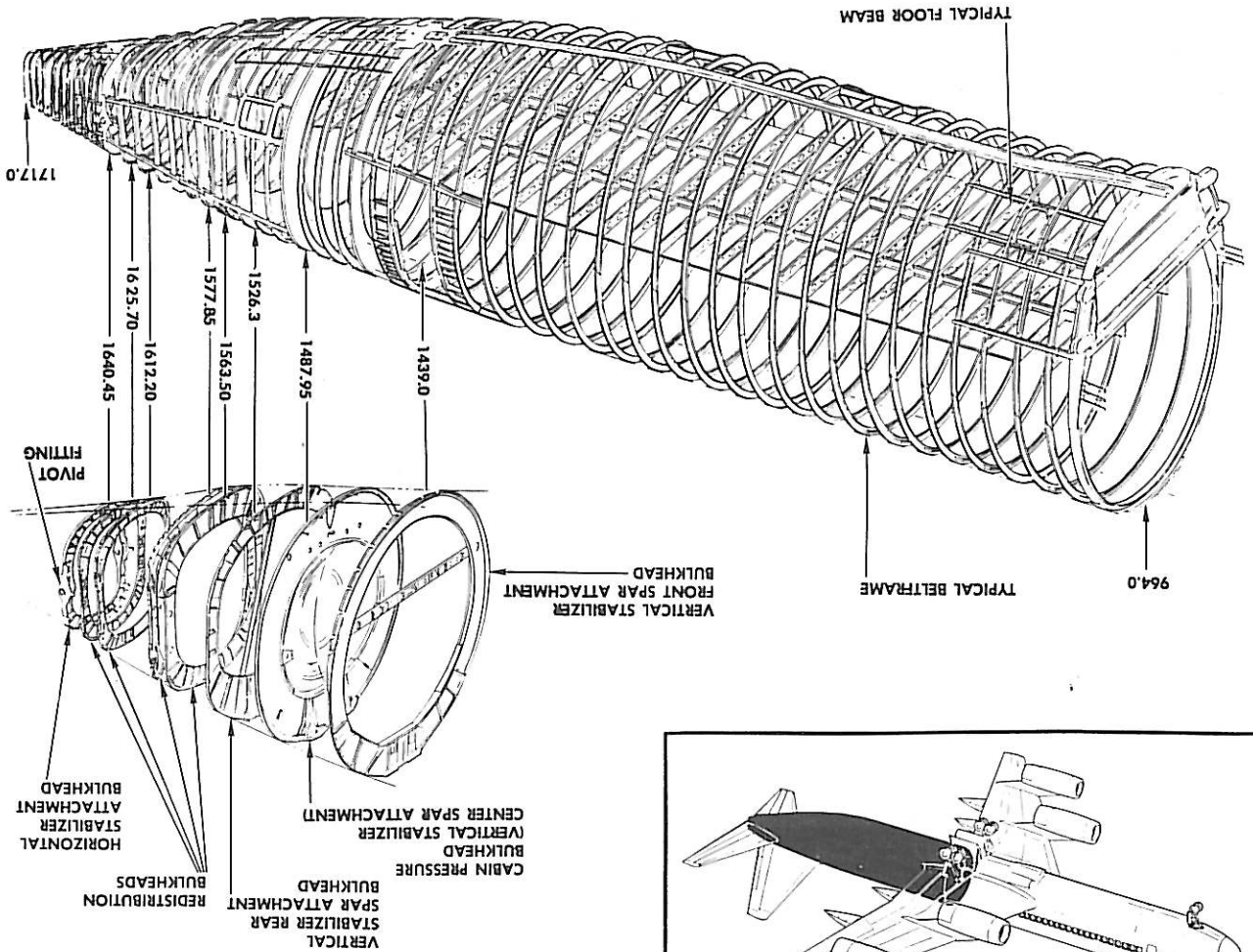
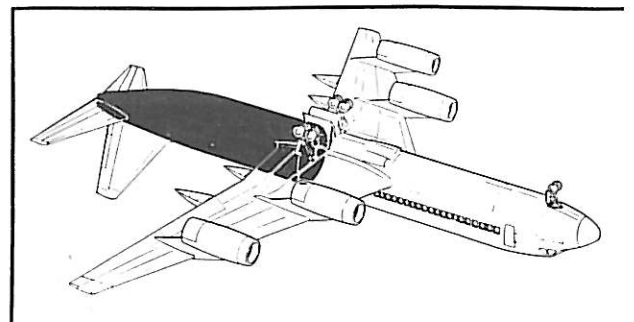
2. Vertical Stabilizer Front Spar Attachment Bulkhead

A special bulkhead at fuselage station 1439, just forward of the aft cabin pressure bulkhead, supports the front spar of the vertical stabilizer. This bulkhead is of conventional built-up frame construction with a machined 7079 fitting, with integral caps, webs, and stiffeners installed on the top centerline; the fitting includes two recessed female lugs which receive the male attachment lugs of the vertical stabilizer front spar. The attachment fitting extends outward approximately 38 inches each side of the airplane centerline, where it is spliced into the built-up frame portion of the bulkhead.

The built-up frame portion of the bulkhead includes a three-piece web with an inner and outer cap. The inner cap consists of a flanged angle riveted to each side of the web and is locally reinforced by straps to a point just above the cabin floor. Below the floor, the flanged angle on the aft side of the web terminates and is spliced into a reinforcing angle nested in the flanged angle on the forward side of the web. The outer cap of the built-up frame portion of the bulkhead consists of two roll-formed angles which are not flanged. The angle riveted to the aft face of the web terminates at approximately 38 inches above the cabin floor; the outer cap below this point consists of a single angle on the forward side of the web. At about 14 inches above the cabin floor the outer cap separates from the fuselage skin and passes inside of the fuselage stringers. Shear intercostals between the stringers in this area attach the bulkhead outer cap to the fuselage skin. The three-piece web is spliced at each side of the tip centerline fitting and just below the floor on each side of the fuselage. The entire built-up portion of the bulkhead is of 7075 aluminum alloy.

3. Aft Cabin Pressure Bulkhead

The aft cabin pressure bulkhead, located at fuselage station 1487.95 has two principle functions: it serves as the aft closure for the pressurized cabin



NOTE:
AFT FUSELAGE SKIN PLATING
IS SIMILAR TO THE FORWARD
FUSELAGE SECTION. (SEE 53-0
FIGURE 2)

and supports the vertical stabilizer center spar. The bulkhead consists of a circular flat web with a tension bubble about sixty inches in diameter located in the center. The tension bubble bulges aft sixteen inches from the circular flat web and is formed from 0.095 inch 2024 aluminum alloy. The thickness of the dome is based on acoustical attenuation rather than on strength requirements. The flat web portion of the bulkhead consists of an inner and outer web cap and three tapered plates, (one on each side and one at the bottom), made of 7075 aluminum alloy, ranging from 0.200 inch at the top of the bulkhead down to 0.095 inch at the bottom.

Cabin pressure forces on the bulkhead are taken into the fuselage skin by direct attachment of the outer bulkhead caps to the skin. In addition, ten hollow compression struts of 7075 aluminum alloy, are attached to the rear face of the bulkhead at the bubble-to-flat web intersection and extend aft and outboard. The aft ends of the compression struts are supported by the vertical stabilizer rear spar attachment bulkhead at fuselage station 1526. The compression struts receive axial forces from the dome and part of the flat web and transfer these forces to the fuselage structure and skin aft of the cabin pressure bulkhead.

The vertical stabilizer center spar loads imposed on the aft cabin pressure bulkhead are transferred into 7079 fittings in the top of the bulkhead. These fittings are riveted to the upper 0.200-inch thick web plate and form two pockets which receive the male attachment lugs of the vertical stabilizer center spar.

Between the two attachment lugs, the outer cap of the bulkhead flat web consists of an extruded 7075 "I" section and a reinforcing strap. The reinforcing strap is continuous over the top of the bulkhead to approximately 36 inches each side of the airplane centerline. The remainder of the flat web outer cap is an extruded 7075 "I" section spliced at the bottom centerline. The inner cap of the flat web is basically a 0.150-inch angle, spliced on each side of the fuselage and reinforced at the top of the bulkhead by a 0.190-inch angle.

The web plates are stiffened every eight inches around the bulkhead by 2024 extruded "I" sections, 2-3/4 inches deep. Three of these stiffeners have wider web legs to allow a double-row rivet pattern at the three web plate splices.

4. Vertical Stabilizer Rear Spar Attachment Bulkhead

The vertical stabilizer rear spar attachment bulkhead, at fuselage station 1526, has three principle functions: It supports the vertical stabilizer rear spar; provides lateral support for the aft cabin pressure bulkhead compression struts; and supports the forward end of the beams, which in turn support the horizontal stabilizer actuator.

The bulkhead is of built-up construction consisting of a chemically milled upper web section and a constant 0.040-inch thick lower web section with an inner and outer web cap. The "chem-milled" section is 71.78 aluminum alloy and ranges from 0.160 inch thick at its top down to 0.040 inch at the bottom. The inner and outer web caps are extruded "I" sections reinforced by tapered straps. The outer cap is riveted directly to the fuselage skin except in the area around the bottom of the bulkhead. In this area the outer web cap is separated from the fuselage skin and passes inside of the stringers. The resulting gap between the fuselage skin and the bulkhead outer web cap is closed by 7075 aluminum alloy intercostals, notched to pass the stringers.

Vertical stabilizer loads are transferred into the bulkhead through 7079 fittings similar in design and arrangement to those on the aft cabin pressure bulkhead. These fittings are riveted to the forward and aft edges of the upper "chem-milled" web to form pockets that receive the male attachment fittings on the vertical stabilizer rear spar.

Loads received from the ten compression struts forward of the bulkhead are transferred into the bulkhead, through machined 2024 aluminum alloy fittings, which also double as web stiffeners at the ten points of attachment. Flanges and "Z" sections of 7075 aluminum alloy provide additional stiffening around the bulkhead web.

5. Redistributor Bulkheads

A redistributor bulkhead is provided at each end of the horizontal stabilizer cutout in the aft fuselage between fuselage stations 1563.50 and 1625.70. One of these, a forward bulkhead, has two principle functions: it redistributes horizontal stabilizer actuator support beam loads into the fuselage structure and skins, and redistributes the vertical shear loads around the forward end of the horizontal stabilizer cutout. The forward redistributor bulkhead also supports the rudder hinge line thrust, under vertical acceleration conditions. The aft redistributor bulkheads, at fuselage station 1625.70 redistributes the vertical shear loads from the horizontal stabilizer pivot into the longrons above and below the horizontal stabilizer cutout. The functions of each redistributor bulkhead are similar; therefore, their construction is approximately the same.

Both redistributor bulkheads are of built-up construction employing double rail-safe webs with inner and outer web caps. Rectangular cutouts in the web of each bulkhead attach the upper and lower 7075 double-channel longrons, along each side of the horizontal stabilizer cutout. The bulkhead web is reinforced by radially-mounted, roll-formed angle stiffeners; also, the splices in the double web section are staggered, to attain maximum strength. The inner cap of the redistributor bulkheads consists of two roll-formed angles and a reinforcing strap. The angles are riveted to each side of the web with the reinforcing strap riveted across their flanges,

thus forming a tee. The outer bulkhead caps at the top and bottom of the bulkhead are also built-up from two roll-formed angles. These angles tie into cross-shaped skin doublers which carry the outer cap continuity over the upper and lower longeron attachment locations. On the forward bulkhead, the outer bulkhead cap between the longeron attachments consists of extruded "I" sections; the outer cap in the same area of the aft bulkhead consists of roll-formed angles similar to the bulkhead caps along the top and bottom. The outer bulkhead caps along each side of the bulkhead are riveted directly to the fuselage skin. In the areas along the top and bottom of the bulkhead the outer bulkhead cap is separated from the fuselage skin, and passes in side the stringers. Both redistribution bulkheads are primarily of 7075 aluminum alloy construction.

6. Horizontal Stabilizer Attachment Bulkhead

The special bulkhead at fuselage station 1640.45 supports the horizontal stabilizer pivots and distributes the pivot point loads into the fuselage, forward of the bulkhead. The tailcone assembly is riveted to the aft side of this bulkhead.

The horizontal stabilizer attachment bulkhead is of built-up construction employing a fail-safe double web, two stabilizer pivot attachment fittings and an inner and outer bulkhead cap. The web consists of two upper and two lower halves of 0.050 inch 7178 aluminum alloy and is reinforced radially by angle stiffeners. The stabilizer pivot fittings provide the web splice. The outer bulkhead caps, above and below the pivot assemblies, consist of an angle riveted to each side of the double web plus a reinforcing strap between the angles and the fuselage skin. The bulkhead cap angles are spliced to the stabilizer pivot fittings with splice angles.

The stabilizer pivot fittings consist of 2014 aluminum alloy half-sections, and are spliced to the inner and outer caps of the bulkhead. The fitting halves are bolted together with four high-strength tension bolts and riveted to the bulkhead. The inner bulkhead cap above and below the pivot fittings is similar to the outer cap and consists of an angle riveted to each side of the double web. A reinforcing strap is riveted to the flanges of the inner cap angles to form a tee. The ends of the inner bulkhead cap are also spliced to the pivot fittings. The outer bulkhead cap is riveted directly to the fuselage skin. Except for the bulkhead web and stabilizer pivot fittings, the entire bulkhead is primarily of 7075 aluminum alloy construction.

7. Typical Intermediate Beltrames

The intermediate beltrames in the aft fuselage area are essentially fuselage contour formers and consist of 0.050 inch 7075 aluminum alloy "Z" sections. In areas where these beltrames pass inside of the stringers,

2024 aluminum alloy intercostals and shear clips attach the stringers to the belttrames. At the top of the typical intermediate belttrames, four stringers pass through notches in the belttrames. A 7075 angle attaches each of these stringers to the belttrame.

Three belttrames are employed forward of the two horizontal stabilizer cut-outs. These belttrames are stretch-formed 7075 "Z" sections. Each frame lays inside the stringers, and except for the corners has no intercostals.

8. Skin - Stringer Panels

The skin-stringer panels in the aft fuselage area consist of 2024 clad skin panels (see Section 53-0, Figure 2) ranging from 0.056 to 0.130 inch thick, with 0.050-inch 7075 "Z" section stringers riveted to the inner surface. These stringers are similar to those used throughout the passenger cabin area and attach to the belttrames and bulkheads in the same manner.

9. Tailcone Assembly

The tailcone assembly riveted to the aft side of the horizontal stabilizer attachment bulkhead is essentially a fairing with a conical top and bottom, with flat sides. The skin is formed from 5052 aluminum alloy in two pieces which are welded together along the vertical centerline. The typical tailcone frames are 7075 "Z" sections spaced seven inches apart.

STRUCTURE - AFT FUSELAGE AREA - MAINTENANCE PRACTICES

1. Inspection/Check - Aft Fuselage Area

The following aft fuselage areas should be checked at regular intervals:

- A. All skins for acceptable laying surface weather sealants, pulled or missing fasteners, distortion, corrosion, and cracks.
- B. Structures adjacent to the passenger cabin windows for cracks, distortion, corrosion, and pulled or missing fasteners.
- C. Stringers, bulkheads, and vertical and horizontal stabilizer attachment bulkheads for cracks, pulled or missing fasteners, corrosion, and distortion.

2. Cleaning/Painting

- A. Keep all structures free from contaminants or materials that could damage the metals. Clean off all such substances in accordance with Chapter 51, STRUCTURES - GENERAL.
- B. Paint all surfaces requiring touch-up or major finish repairs in accordance with Chapter 51, STRUCTURES - GENERAL.

3. Approved Repairs

- A. Replace or repair damaged sealants as directed in Chapter 51, STRUCTURES - GENERAL.
- B. Repair damaged skins or structure with temporary repairs as directed in Chapter 51, STRUCTURES - GENERAL, or with permanent repairs as shown in the Structural Repair Manual.

FUSELAGE FLOORING - DESCRIPTION AND OPERATION

1. General

The fuselage flooring consists of aluminum-core, honeycomb panels through-out the passenger cabin, buffet and lavatories, and stiffened aluminum alloy sheet in the flight compartment; see Figure 1. The flight compartment flooring includes two levels with the forward level elevated for the pilot's and copilot's seats.

2. Flight Compartment Flooring

The forward elevated level, or pilots' floor, and the aft lower level or crews floor consist essentially of webs and intercostals of 7075 clad aluminum alloy. The webs and intercostals are permanently riveted to transverse floor beams and the fuselage skin to form a structural part of the fuselage. The elevated floor level is reinforced longitudinally by the pilots' seat tracks, longitudinal intercostal beams and stiffeners. The pilots' seat tracks are also supported by continuous longitudinal beams between fuselage stations 212 and 250. The transverse floor beams, located at each end of the seat track support beams, also attach to the nose landing gear box through vertical support beams.

The aft lower floor level is reinforced by longitudinal intercostal beams, stiffeners, and a continuous beam located immediately to the right of the airplane centerline. The flight engineer's seat tracks are at the right angles to the airplane centerline and are attached to the floor by dagger-type fittings. The flight compartment flooring incorporates openings for access to subfloor areas, thus eliminating the need for access doors. These openings are as follows:

- A. Between the forward pressure bulkhead and the forward end of the pilots' floor at fuselage stations 152 and 187.

- B. Rudder pedal openings.

- C. Control Column openings.

- D. Below the pilots' pedestal.

- E. Below the left- and right-hand consoles.

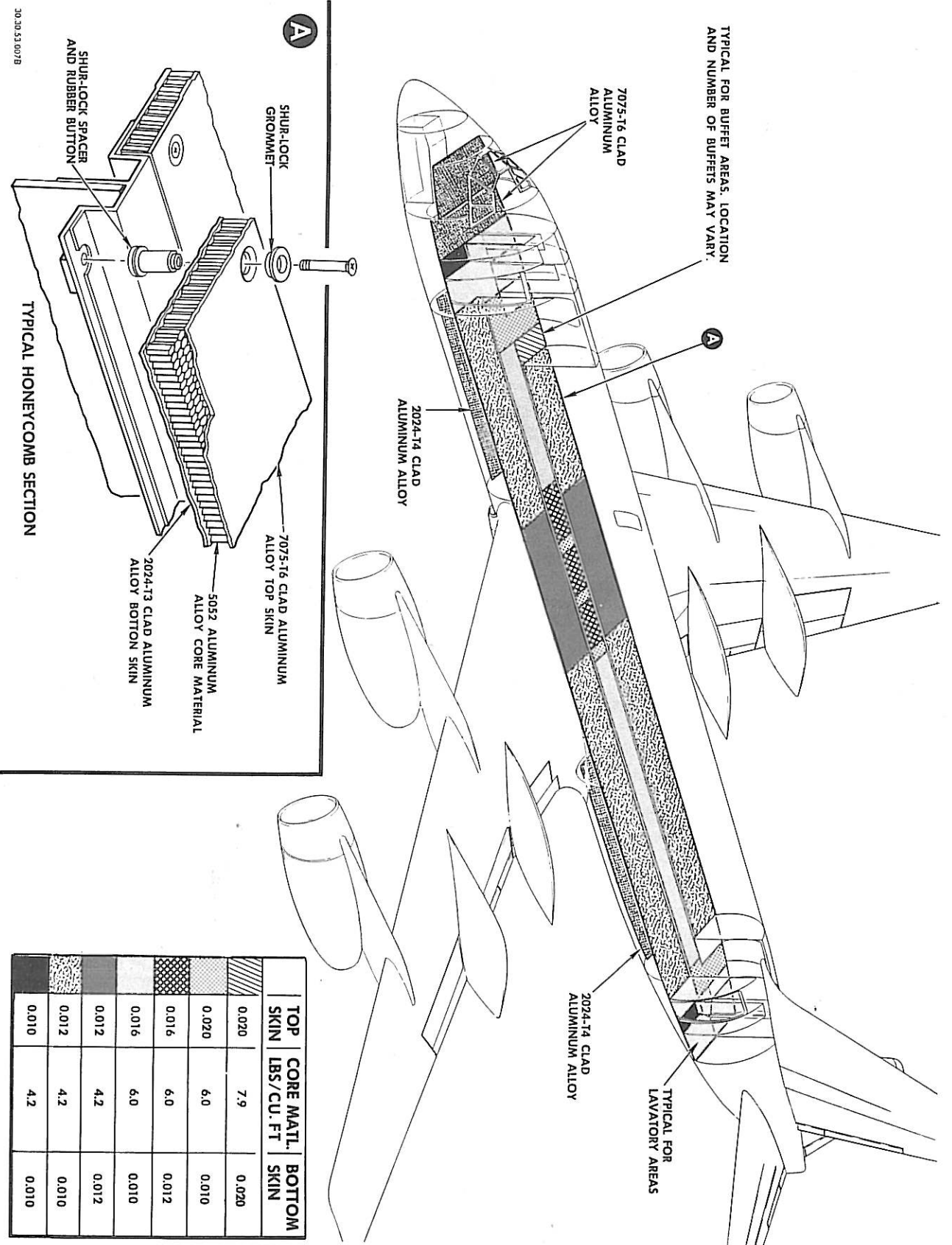
- F. Below the circuit breaker panel.

3. Cabin Area Flooring

The floor panels of the passenger cabin, buffet and lavatories consist of a one-half inch thick honeycomb core bonded between two face sheets with a thermosetting adhesive type bonding agent. The honeycomb core, top face sheet, and bottom face sheet are 5052, 7075, and 2024 aluminum alloy respectively. The outer edges of the panels are filled with an epoxy resin to seal the panels and to prevent the core material from crushing.

Fuselage Flooring
Figure 1

Feb. 1/62
AB-2



TOP SKIN	CORE MATL. LBS./CU. FT.	BOTTOM SKIN
0.020	7.9	0.020
0.020	6.0	0.010
0.016	6.0	0.012
0.016	6.0	0.010
0.012	4.2	0.012
0.012	4.2	0.010
0.010	4.2	0.010

In general, seven types of flooring are used in the passenger cabin, butlets and lavatories. See Figure 1 for information concerning the materials which constitute the floor panels and the location of each type of panel.

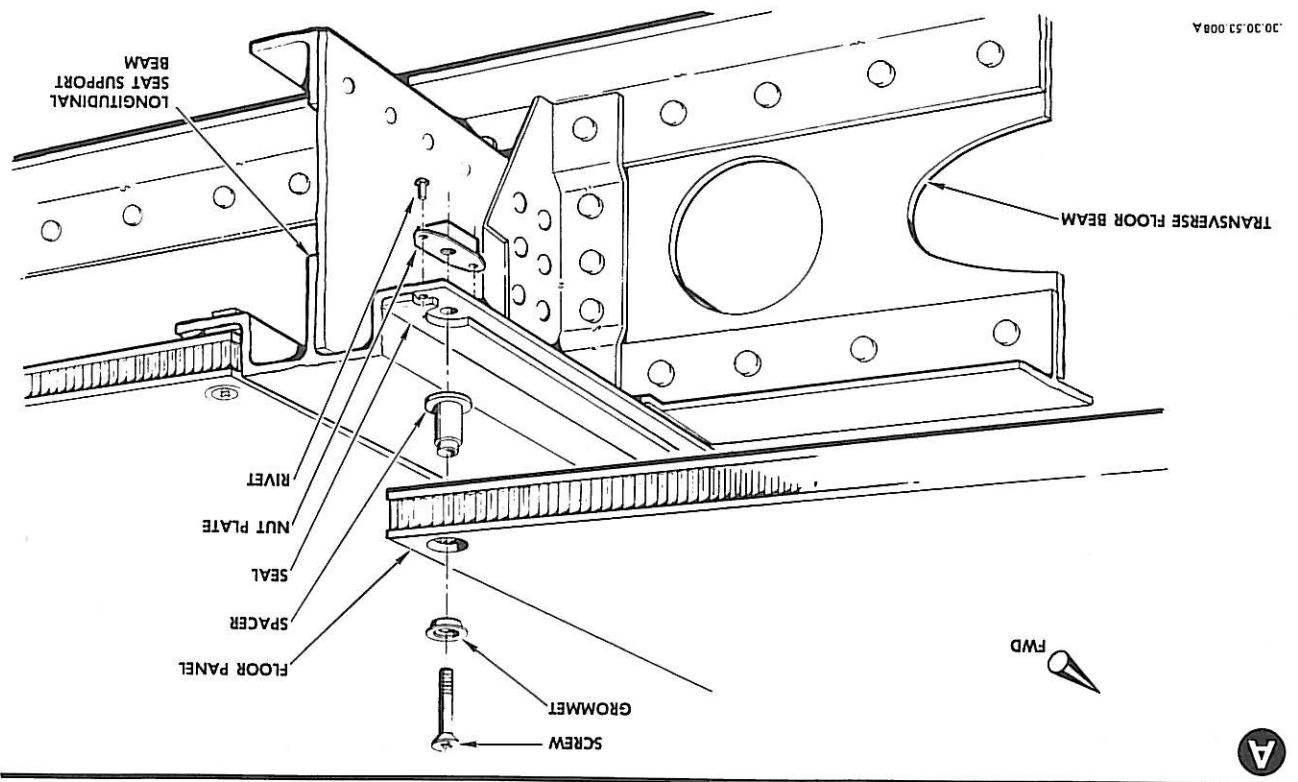
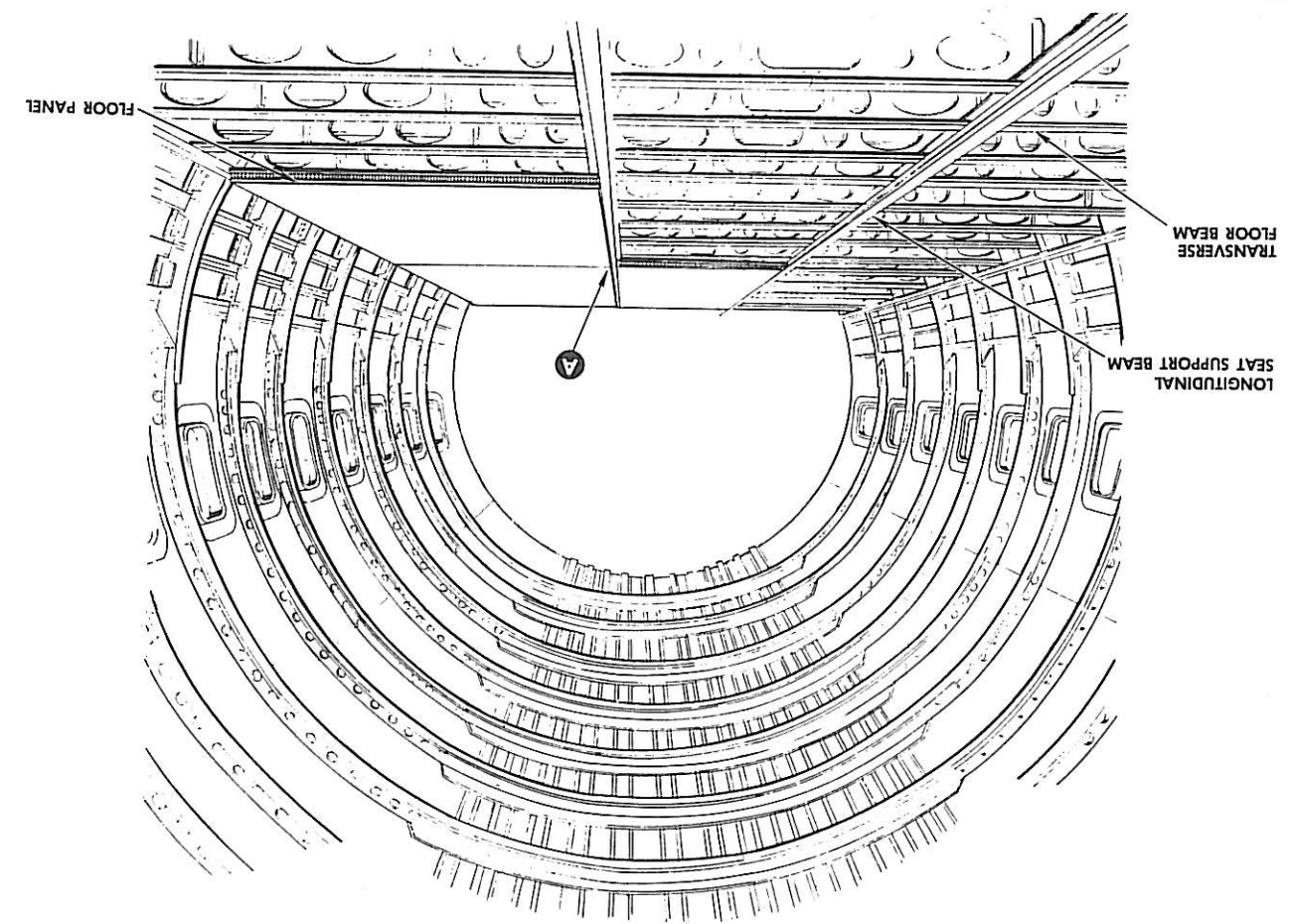
The honeycomb floor panels are attached to the floor supporting structure with screws which pass through Shur-Lok spacers in the floor panels and into nutplates in the floor substructure. Each Shur-Lok spacer consists of a spacer and a grommet that are permanently attached to the floor panel. A synthetic rubber button-type gasket is molded to the head of each Shur-Lok spacer to eliminate chafing of the floor supporting structure by the spacer heads. Cork and rubber materials form an aoustical seal between the floor panels and floor substructure. All honeycomb floor panels are removable without removing permanent installations or damaging the passenger cabin interior trim.

4. Transverse and Longitudinal Floor Support Beams

Transverse floor beams are located at each belttrame forward of the wing center section and at each belttrame aft of the main landing gear wheel wells as shown in Figure 2. These transverse beams constitute the main supporting structure for the honeycomb panels which are used for cabin flooring; no vertical supports are employed below the transverse floor beams. A typical transverse floor beam is 6.34 inches deep and consists of an 0.040 inch 2024 aluminum alloy web with extruded "I" section upper and lower rails. The upper rail is 7075 aluminum alloy; the lower rail is 2024 aluminum alloy.

Longitudinal floor beams are used as cabin floor supporting structure above the wing center section and above the main landing gear wheel wells. These beams attach directly to the upper surface of the wing and to main wheel well structure. There are seven longitudinal beams over the wing and twelve over the main landing gear wheel wells.

Two longitudinal extruded "hat" section beams, employing a vertical stiffener web, extend the full length of the cabin. The "hat" section beams attach to the upper surface of the transverse beams and contain the passenger seat aisle attachment fittings. These "hat" section beams also act as a longitudinal splice for the cabin floor panels.





CONVAIR MODEL 30

FUSELAGE FLOORING - MAINTENANCE PRACTICES

1. Inspection/Check Fuselage Flooring

Check the fuselage flooring at regular intervals for the following:

- A. Honeycomb flooring in the buffet, coat closets, lounges, aisles, lavatories, and under seats for cracks, distortion, pulled or missing fasteners, corrosion, and acceptable sealants.
- B. Floor seat tracks for corrosion, pulled or missing fasteners, distortion, cracks, and damage that must be repaired. Refer to Chapter 51, STRUCTURES - GENERAL, for repairs to sealants, and removal of corrosion.
- C. Flight compartment flooring for cracks, distortion, pulled or missing fasteners, corrosion, and acceptable sealants.
- D. Transverse and longitudinal floor support beams for acceptable sealants, corrosion, pulled or missing fasteners, distortion, and cracks.

2. Cleaning/Painting

- A. Keep all honeycomb panels clean and free from contaminants or materials that could damage the metals. Clean off all such substances in accordance with Chapter 51, STRUCTURES - GENERAL.
- B. Paint all surfaces requiring touch-up or major finish repairs in accordance with Chapter 51, STRUCTURES - GENERAL.

3. Approved Repairs

- A. Replace or repair damaged sealants as directed in Chapter 51, STRUCTURES - GENERAL.
- B. Repair damaged flooring and floor beams with permanent repairs as shown in the Structural Repair Manual.

